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Original Contributions.

REPAIRING RUBBER PLATES.

By O. H. Sossaman, Clarion, Iowa. Read Before the Iowa State Dental Society, at Dubuque, May 1-3, 1900.

One thing should be remembered at the start, namely, that a rubber plate repaired with rubber alone is not so strong as it was originally. I have often done the work according to the old methods, and in a short time have had them break in the same place as at first. Consequently I have adopted the following method, which may not be original with me, but it has never been described so far as I know. Suppose the rubber plate has been broken in two, and nearly through the center—hold the two parts together as accurately as possible, and mark at right angles across the fracture near the incisors and at the back of plate. Now drill holes one-eighth inch on each side of fracture and about the diameter of a pin. Double binding-wire and put a ligature at each end, drawing the wire up tight and smooth, thus closing the fracture. This affords sufficient strength until you can fill the palatal surface of plate with plaster. After it is set, cut away the labial surface of the pink rubber, beginning about one-half inch on either side of fracture, and aim to bevel a straight line on either side also, to meet at the fracture and the plaster model, being careful not to mar the latter.

Now drill several holes near the outside of beveled portion, and prepare aluminum to fit snugly into the excavations made in the plate, so that when you have it waxed over smoothly with pink rubber the aluminum will not be exposed. In finishing, the metal is prepared by anchoring it to the proper gag, and perforating with a small punch upon a lead slab. Be careful not to weaken the metal. Now that this part of the plate is waxed with pink rubber and is ready to be vulcanized, invest in the flask, palatal surface down, just as you would an ordinary case, covering the teeth and plate, and exposing only a strip each side of the fracture for about one-

half inch. After the plaster has set, remove the wire ligatures and pour the top half of flask. Upon separating you will find that you have the original thickness of plate, as no wax has been used. Now bevel this part of plate as you did the labial surface, then prepare the aluminum to fit exactly into the beveled part, being careful to place the metal far enough below the surface so that it will not be exposed in finishing. If a flat surface of aluminum should be exposed the rubber is apt to curl away from it and afford a lodging place for food, etc., although it would not be any worse than a plate of this metal with rubber attachments. I use aluminum frequently for strengthening rubber plates, especially lowers.

WHY ARE WE NOT RECOGNIZED AS ARE OTHER LEARNED PROFESSIONS?

By J. W. Heckler, D.D.S., Buffalo, N. Y. Read Before the Buffalo Dental Association, Oct. 9, 1900.

We read of lawyers in their libraries, statesmen at their desks, physicians in their consulting-rooms, and artists in their studios, but rarely do we hear of the dentist in his laboratory or at his operating-chair. Why, I ask you? Why are we not included in the recognition accorded to other professions? Is it because ours is not a profession? Because our calling has not reached that high standard which the critical public demands? Because we are retrograding to, shall I say, a business? I ask you as members of this society to answer. If this be so there must be some cause, and if there be a cause we must seek a remedy to obviate it. What is it? Wherein does the evil lie? Is it the fault of us as dentists? Or is it out fault as a society? Or is it the fault of our mother, the college?

Is it possible that graduates get the impression from the money-making aspects of some colleges? The impression which is stamped on the laity, that they are obtaining something for nothing at our colleges, that they are securing the services of our professors, that they are getting fillings, plates, crowns, etc., for the cost of material alone. I believe this to be bad doctrine for our young men and women, as it teaches them charlatanism, to be deceitful, and to advertise.

Again, are we as a profession neglecting the young graduate? When he receives his diploma and passes the state board, should he not be turned over to us as one of us? A reputable college by con-

ferring the degree of Doctor of Dental Surgery upon a candidate says he is as good as we are. The state recognizes him as it does us and affords him the same rights and protections that it gives us. The deans of our schools should request the young men, or women, on receiving their diplomas to ally themselves with the dental society in their locality. The officers and professors should see to it that they are not launched on a community with no association, no government, no one to look to, nothing to be responsible to, no one to go to when difficulties arise. Let the colleges recommend their graduates to us, and let us accept and succor them, teach them that they may teach us in good time; help them to become better than we are.

Will that not elevate the dental profession to the high pinnacle where it rightfully belongs? We of course will get some rascals in our societies by so doing, but do we not get them anyway? I think some of the most incorrigible scoundrels that ever walked the face of God's earth are dentists, and they often belong to dental societies. On the other hand, we have some as fine men as one would care to associate with who are not attached to any dental organization. Why? that is the question.

This is the age of organization, of banding together for mutual aid, benefit and protection. We can stand as a body of professional men, practicing a scientific profession, with broad views singly and collectively as a society. Out title should be sufficient to admit us to the best families and social circles. If our present dental organization has not a charter or by-laws sufficiently broad, look to it that they are amended, revised and up to the standard aimed at. I am inclined to think there is too much politics in our societies. Very often a small ring exists that is not wholesome, one that stands cross-legged in the doorway which leads to progress and the betterment of the organization. Let us root out these fossils and give them to know that they are only individual members and not dictators, that they must respect the rights and feelings of the society members and guests.

In reference to the attendance at our union and annual meetings, I have frequently noticed that those members we most expect to be present stay away the greater part of the time, probably trying to put in an extra filling or crown, or to do something to earn a few dollars for fear another might get the patient. This is wrong! When

we have a two or three days meeting, with clinics, essays and discussions of the various subjects, getting the very essence of knowledge from scientific and intellectual minds, and ideas that probably have taken years and years of toil and study to shape for our education, we should honor these teachers by our presence and attention.

The clinical features are the spice of a meeting, and give dentists an opportunity to display their talents in one way or another. Some take naturally to special departments and become experts in some particular line. The illustration is to an article what a clinic is to a convention. Many dentists shirk the responsibility of demonstrating before a society, but are quite willing to read papers containing reports of almost incredible operations which they have performed with success beyond the comprehension of the skilled clinician. More practice and less theory are needed.

BUSINESS SIDE OF A DENTAL PRACTICE.

By R. S. Bandy, D.D.S., Tipton, Iowa. Read Before the Iowa State Dental Society, at Dubuque, May 1-3. 1900.

This is a subject that is not often discussed. We have no lack of instruction relating to the welfare of our patrons, and the carefulness with which all operations must be conducted; in fact, there has been a deluge of dental literature along these lines. Most of it has been excellently written, the premises well taken, the ground fully covered, and has accomplished a great purpose; but so little has been said as to the duty the dentist owes himself, in return for his services, that he has in a measure begun to think his livelihood a secondary consideration; that he is a sort of a necessity in the community, and his duty is to minister to the public without regard for his own welfare; but when he entertains such a thought he is laboring under a false impression and doing himself an injustice.

In the first place, the community rarely appreciates the man who ignores his own welfare, and secondly, no man cramped financially can give any occupation his best thought, no dentist can give his profession his best effort, neither can he provide the necessary instruments, appliances and supplies so essential to good work and success. He should therefore apply himself to business principles and not be led too far by the advocate of ultra professionalism. I do not wish to be understood as disregarding that element in the practice of dentistry, but professionalism can be and often is car-

ried to extremes, and to the extent where it works hardships and difficulties.

The young man who contemplates the study of dentistry, upon inquiry of his home dentist is informed that the prospect is not very flattering, and that if he is looking forward to a lucrative profession, not to think of dentistry. That is the first lesson in self-sacrifice. Upon concluding to study dentistry he presents himself at the college, and during the first set of lectures from each of the chairs the same sentiment is reiterated. He has this doctrine of self-sacrifice injected into him daily for three years, until he thinks he might as well have studied for the ministry in the first place.

By the time the student is ready to locate he has been fully convinced that there is no money in his calling; and the chances are, that if he can make a respectable living without ever owning a foot of real estate he will be perfectly satisfied. Such is the position in which most dentists are situated when they begin practice, and the most surprising thing to me is that we attain the success we do. That he never expects to accumulate property is not surprising, owing to the opinions of the older practitioners. It is not at all likely that he will become well-to-do; the fact that it is thought improbable makes it harder to accomplish. With all due deference to the theory of self-denial in the practice of dentistry, I wish to register a mild protest. In this age, when men in all walks of life are striving to accumulate wealth, it does not seem rational that a class of refined and educated men should think of going through life, pursuing the practice of a profession which requires so much nervous force and in which the years of active service are so few, without some thought of a business success and some prospect of a partial retirement in old age.

There are other reasons why a busy dentist is not more frugal and accumulative, aside from his early teachings. There are few occupations in which one is necessarily so isolated from business and strife as is the dentist. The majority of his patients being of the feminine gender, the conversation, if any be held, is usually of a social nature, and does not tend to inform him along business lines or acquaint him with business methods. After office hours his time is usually spent with his family or in a social way, and in what little intercourse he has with business men he finds himself unacquainted with their methods and at a disadvantage.

There is no class more imposed upon in a business way than dentists. There is an opinion prevailing in the community that they have a bonanza and are making money faster than they can find places for it. This opinion not only has a tendency to make them pay the highest price for everything purchased, and makes their credit good in the town, but they themselves begin to think that they have a little more money than most people, and gradually get more free with it. This they cannot afford to do, for there are numerous expenses to be met in conducting a practice which none knows of except the dentist. True, in most cases the dentist makes his money in small fees, although the yearly aggregate is quite up to the average professional man's income, but the outlay in conducting a practice successfully is so great that the net income is considerably reduced. I have kept a careful file of bills for the last six years, which represents every item of expense required to furnish and supply my office, and have found that about one-third of every dollar received must be expended directly for office equipments, rent and other expenses. Therefore, it is plain that when one-third of your total income must be expended, an outlay for which you get no personal benefit, as it goes directly to your patrons and their welfare, then you cannot afford to be careless and unbusinesslike in the management of your affairs.

We often hear this statement made by a dentist: "I am busy all the time, get fairly good fees for my services, and as a general thing, collect pretty closely, but there is a leakage somewhere." Certainly there is, and it is in the management. The first thing a dentist should do, after getting into practice, is to open up a bank account and go to the bank regularly, the same as any other business man. Do not carry your money around in your pocket. Take what pocket money you need and charge it to your account. Deal with yourself according to business methods. Do not talk of your business or how much you are doing. If you are succeeding everyone will know it. You seldom hear a business man of large or small affairs telling how much business he is doing or has done in the last year, or how busy he is. He uses the time and force that would be required in that talking in pursuing his business, and besides in most cases, it is not good taste.

I think the time has come when in every community the dentist is expected to be a man of affairs in all his relationships. This has

been brought about by the rapid development of our science. One of the most wonderful things of this closing century is the degree of excellence modern dentistry has attained. To this end, the standard of most of our educational institutions has been elevated, the course of study extended, and the time required to complete the course lengthened, so that the men that are graduating from our dental schools to-day are better equipped than ever before for intelligent and successful practice.

In this day of progress in the fields of literature, science and industry the dentist is not neglected. There are numerous journals which he can secure, conveying the best thoughts of the time. No embargo is placed on a single discovery. There are progressive societies which he can attend. So it is safe to say that there is no excuse for poor work and incompetency. Nearly all that can be done for the equipment of the dentist has been accomplished, and it depends upon himself and his natural skill and alertness to make a success. I am afraid he is not using the opportunities at hand, if he fails to grow more proficient and successful each year.

PRESIDENT'S ANNUAL ADDRESS.

By C. R. Baker, D.D.S., Davenport, Iowa. Read Before the Iowa State Dental Society, at Dubuque, May 1-3, 1900.

I am afraid that general education in the dental profession is not keeping pace with the advance in other lines. We need men who have had the advantage of college education, who have the knowledge that will make them capable of analytical reasoning, as well as research; men who, from a series of scientific facts can make the proper deductions. The important questions of the day are beyond the comprehension of a man of mediocre education, and those who cannot grasp the meaning of the experiments of the men who are leading us in lines of development in the cause of dental caries, nomenclature, formation of cavities, etc., are behind the times and a drawback to the profession. We must admit that many of our leaders have never had the advantages of higher education, but they have educated themselves to a higher degree than those around them, and the man who enters the profession to-day should be able to begin where they leave off.

Too much has been said about the studies in our colleges, and what kind of practitioners they are turning out, whereas more

depends on the kind of boys we send to the schools, for they must make the best dentists they can of those who are sent to them by the profession. Very few take up the study of dentistry without consulting some one already in practice, who should know whether or not they are mentally fitted. The profession make the standard of the college by the quality of students they send to it.

In obtaining recruits too many are inclined to pick out those who are not educated, and to tell them how easy it is to enter the dental institutions, and that if they once get in there is no doubt about their getting through. It is not the colleges that are holding the profession back, but the regard in which so many of those already in it hold their calling. If they really think the demands made upon a dentist do not require more than a grammar school education, why do they speak of this as a learned profession? Would you refuse to take into your office to-morrow a boy who wished to study dentistry and who was willing to pay you, if he had passed only the grammar school; or would you have the stamina to tell him not to attempt it without at least a high school education? I know a dentist who took into his office a young man below the average in possibility of mind development who was not able to finish a grammar school course, and told him that after one year of study with him he could pass the state board examination or enter a dental college with advanced standing. What respect can such a man have for his profession? High schools, colleges and universities are multiplying so rapidly that we can hardly appreciate the meaning of the change. To-day the profession needs, more than anything else, men with college educations; and the more we have of those with less than a high school training the more are we degraded. I saw a statement of the number of those who were to graduate from Harvard this year, and there were hundreds who expect to take up the study of law, or medicine, or other professions, but there was not one to take up dentistry. If a young man has a year to spare before entering a dental college, why not advise him to spend that year in the best school he can find, rather than in an office. The vacation months will be sufficient to give an insight into private office experience.

It has been said that the professions are so overcrowded that the college graduate can find no place in them. In one way I believe this to be untrue, but they certainly are overcrowded with unedu-

cated and incompetent men, and to such an extent that they are obliged to resort to unprofessional methods to make a living. Thus as a whole we are degraded in the eyes of the public, and the educated man hesitates to enter a profession in which his hard-earned knowledge must come into competition with such methods. But the intelligent men who do enter the dental profession are taking positions that cannot be denied them in the front ranks, and will emphasize their superiority.

Although the educated class hesitates to take up our calling, this hesitancy, together with the incomprehensible increase in the number of college and university graduates, is working a regeneration in the business, both mechanical and commercial, of the country. These men to-day are taking up pursuits outside of the professions, where heretofore an education was considered unnecessary, making a larger class who will recognize the ability of a well trained dentist. We are just beginning to feel the effect of higher education and there is no saying what advancement will be made in a few years, for if people are becoming so much better educated, they will require better educated professional men and will employ only such as come up to their standard.

We must take into consideration the difference between a graduate of to-day and one of twenty or twenty-five years ago. We do not see in the highly educated man a physical wreck. Our educational institutions are so systematized that they are turning out men who are well balanced physically and mentally. These men are better fitted for dentists because their mechanical as well as their mental powers are developed, the practice of dentistry requiring both in a high degree. Our anatomical, physiological, pathological, chemical, mechanical and bacteriological laboratories are bearing fruit such as never could have come from mere observation. They are replacing theories by facts, and are giving us a scientific foundation upon which to build. The great truths of the age are those which are worked out and proven in the laboratories of these special sciences, and we need more men who can give their knowledge and time to the furtherance of science in this way.

Modern developments are fast making a distinction between the men who are ignorant of the science of dentistry as well as unmechanical; and those who are intelligent and whose hands are capable of working with their brains. Care and ability in instruction

of patients, and in following the pointings of these developments, will in time distinguish the careful and intelligent man from the one who is practicing as a charlatan or quack. The understanding and carrying out of these systems and theories require a skill and knowledge of which the latter is not possessed. Therefore I contend that the public demands and the profession requires men of greater intelligence and of higher education.

TRIGEMINUS.

By J. B. Pherrin, D.D.S., Central City, Iowa. Read Before the Iowa State Dental Society, at Dubuque, May 1-3, 1900.

We must all concur in the opinion that the dentist is largely a victim of circumstances, due to a lack of enlightenment among his patients regarding the scope of our profession. Until recent years dentistry was regarded as a purely mechanical art, and it is difficult for the average patient to associate such troubles as neuralgia and paralysis with others arising from the teeth. Such disorders are usually treated symptomatically by the physician, and the dentist makes a great mistake by not asserting himself when these opportunities present. In my judgment there is a lack of study and research in the profession regarding trigeminal disorders, so I venture to present this subject.

Trigeminal manifestations are commonly of a reflex nature and are often remote from the seat of trouble. I make the following arrangement: 1. Initiative lesions, usually simple, involving but small areas, diagnosis and prognosis favorable. 2. Dental lesions, causing manifestations in a remote part. 3. Systemic disorders, causing disturbance at some point supplied by the fifth cranial nerve, particularly the dental branches. These are often confused, as a simple lesion may cause pain at the seat of trouble, and at the same time cause reflex disturbance. In prognosing obscure cases the dentist should not promise too much, for it is easy to be mistaken. Discovery and exclusion of organic disease will assist in diagnosing all cases. As those under No. 1 are usually easily explained, let us take up those under No. 2. This class includes the great majority of all cases, and in them it is almost as easy to enumerate the forces that do not cause disturbance, as it is to name those which do, for they are innumerable. Among the many cases arising from natural causes which have provoked neuralgia or par-

alysis are: Devitalized pulp, with or without caries of the tooth; pulp nodules; exostosis; impacted teeth; dentigerous cysts; necrosed interdental septa; rudimentary crown of tooth in antrum, etc. Some of the extraneous mechanical causes of the same trouble are: Pieces of wood and other substances used as toothpicks; fillings overlapping the cervical margin of cavities; silk ligatures left on teeth after an operation; pressure of artificial denture upon cicatricial nerve tissue in the gums, etc.

Among the natural causes was omitted the eruption of temporary teeth and of the third molars, which gives rise to unmistakable symptoms of cerebro-spinal meningitis. Two cases have recently come to my attention. The first was an infant sixteen months old, in good general health, which was suddenly seized with vomiting and convulsions of a clonic character. Marked symptoms of meningeal irritation, high temperature, rapid and irregular pulse rate, followed by symptoms of collapse. The patient was treated symptomatically by the attending physician for cerebro-spinal meningitis. The vomiting continued forty-eight hours, occurring at intervals of about fifteen minutes. During a period of sensibility the babe attracted the attention of the attendants by vigorously rubbing the gums over the site of the first temporary molars. Local treatment was at once resorted to, with encouraging results, which was supplemented by systemic treatment for the more prominent general symptoms. The vomiting stopped at once and other symptoms subsided in a comparatively short time.

The second case was a young lady of about twenty years, in excellent general health. She had been troubled for some months by the tardy eruption of the lower third molars, one of which had made its appearance and had been successfully treated by removing the overlying gum tissue, relieving the patient from great pain and annoyance. The gums healed perfectly. In a short time the tooth on the right side made itself manifest by pain in the part and the patient called to have an operation performed similar to the first. As it was late in the evening I decided to wait until the following day, so applied a counterirritant to the part and dismissed patient. She did not return the following day and I concluded that she had been relieved for the time, which was really the case for about three days. At that time the symptoms returned with increased severity, accompanied by anesthesia of the skin over the

mental foramen, embracing an area about the size of a half-dollar. There was severe pain in the right occipital region, with a flexure of the head and neck in that direction. Local application again relieved the pain, but as the patient was unable to open the mouth wide enough to permit an easy operation, it was decided to wait until a more favorable time. The immediate local symptoms subsided to a great extent and several days elapsed before I again heard from her. Then the report was given out that she was dangerously ill, with symptoms of cerebro-spinal meningitis. As she was at this time under the care of a physician I did not see her nor did I at that time associate with her present illness the symptoms I had seen and treated.

In a few days her case was pronounced hopeless. She passed from one stage of the disease to another in rapid succession and died. The later conditions being delirium, a dull, sleepy state, coma and death. The dental lesion having subsided, it was overlooked by the physician as being an exciting cause; and with my limited knowledge of the malady I did not properly associate the dental lesion with the alarming symptoms in time to relieve the sufferer, or to verify my present belief that it was a true case of cerebro-spinal meningitis induced by the eruption of the third molar. As in all cases of a reflex nature, we are left to conjecture as to the true cause. My best authorities agree that the fifth nerve is very intimately associated with the nerve supply of the dura mater.

If it were not for the desire to make this paper short I might cite a number of cases of facial spasm, paralysis of the muscles of mastication, clonic spasm of the muscles of mastication, tonic spasm of the muscles of the neck, paralysis of the palpebral muscles, anesthesia of regions supplied by the various branches of the trigeminus. On the whole, cases of anesthesia and paralysis are less frequent than neuralgia and have thus far responded to treatment more readily than have the cases of neuralgia which have engaged my attention.

In the majority of cases they have yielded quickly to small doses of spartin and strychnin. Others have been treated by mild faradic currents with beneficial results.

The cases of neuralgia under class 2 usually respond readily to doses of acetanilid with Tully powder in equal parts in doses of $\frac{6}{10}$ grain repeated at intervals of from two to three hours. This

class affords a subject for study that cannot be properly treated in a paper of this length even if taken alone.

Class 3 embraces those cases which, through reciprocal courtesy, are directed to the general practitioner for treatment. The etiology of the cases in this class is almost always obscure and difficult to locate. In both sexes we find severe neuralgia accompanied by anesthesia and loss of motive power in regions that unmistakably should be governed by the trigeminus. Treated etiologically those cases which are common to both sexes arise from a faulty alimentary condition, usually indigestion or constipation. "Man is fearfully and wonderfully made," but the organism known as woman is beyond human comprehension. There seems to be no particular time after the age of ten years at which she may be exempt from those distressing neurotic disturbances referring to the dental organs and accompanied by meningeal headaches, facial neuralgia, blindness, etc. As a rule she is afflicted more particularly at the time the menstrual period is becoming established and at any interval during its continuance through life. Disturbances referred to the several branches of the trigeminus are almost invariably experienced during the period of gestation. At the climacteric period she is again liable to be called upon to suffer frequent attacks until the complete cessation of the menses, though some cases continue throughout the life of the patient, varying both in the intensity and in the frequency of the seizures.

Ordinarily those affections arising from alimentary causes are cured upon the removal of the cause, but relief is often afforded by the administration of large doses of Gelsemium (tincture), in doses of ten to twenty m. every two or three hours until the stage of intoxication is reached.

For those affections arising from genital disturbances in the female, may we not beseech the shade of Æsculapius to return and appoint a specific, for there is nothing in the materia medica that may be relied upon to afford even temporary relief. However, something must be done in every case, and I have usually resorted to the same treatment as followed in cases of neuralgia under class 2, with variable success.

In summarizing, I shall quote Dr. J. Ludwig Hirt, professor at the University of Breslau. Of neuralgia he says, "The neuralgia of the first division of the 5th nerve is mostly an affection of the

supra-orbital nerve, with pain in the forehead, the nose, the upper eyelid, and the eyeball (the ciliary nerves). The other terminal branches are hardly ever affected. The neuralgia of the second division attacks the cheek, the lower eyelid, the nose, the upper lip, often also the upper row of teeth and the palate (spheno-palatine branch). The branch most commonly affected, sometimes also by itself, is the infraorbital. The neuralgia of the third division embraces the lower jaw, the chin, the cheek, sometimes also the aurical and the external meatus. The lower row of teeth, the tongue, and the mucous membrane of the mouth are often the seat of intense pain. An isolated affection of the third division is comparatively rare. The inferior alveolar branch, however, forms an exception to this, as it is not rarely attacked separately, and the consequent toothache has often induced patients to have one tooth after another extracted—of course, however, without any improvement.''.

Authorities also state that the diseases of the trigeminus are intracranial and peripheral, cortical and bulbar; but by far the most frequent are the peripheral affections.

RETAINING APPLIANCE FOR THE LOWER ANTERIOR TEETH, ADAPTABLE FOR BRIDGE-WORK.

By C. S. Bradley, D.D.S., Beloit, Wis. Read Before the Southern Wisconsin Dental Association, at Janesville, May 2–3, 1900.

Those who were present at the annual meeting of our state society two years ago will remember two excellent clinics given by Dr. Good of Chicago and Dr. Campbell of Lake Geneva. It was demonstrated that pus pockets caused by pyorrhea could be obliterated; the loosened and malposed teeth brought into alignment by the skillful use of a silk ligature, and the mouth restored to a cleanly, wholesome condition. Any treatment of pyorrhea, however, (excepting that of replanting the teeth) cannot do more than return the diseased parts to health. It cannot restore the alveolar process where destroyed, or draw the gum tissue back to the neck of the tooth. The very act of healing produces a recession rather than extension of gum tissue and alveolar process. Particularly in the lower anterior teeth we find that after persistent treatment some permanent appliance is necessary to hold the loosened teeth in their proper relative positions.

I will present the treatment of three classes of cases: (1.) The one I have mentioned where there is no attaching tissue except at the extreme apical portion of tooth. (2.) But slight attachment and one or two of the incisors missing. (3.) One or two incisors missing, the remaining ones firm and free from disease, but very much inclined laterally toward the resulting space. These conditions demand an appliance of varied requirements: durability, extreme lightness, strong but not cumbersome nor unsightly, and as nearly self-cleansing as bridge-work can be made. It must afford such a firm grasp upon the loosened teeth that they may be held immovable, and provide a strong anchorage when utilized for a bridge. The appliance designed by Dr. Case to retain the upper teeth after regulating will meet these requirements; and if it is modified somewhat to suit the difference in the shape of the teeth, and greater difficulty of securing lower impressions, it will answer admirably. It is more difficult to fit a band accurately to the lower incisors because of their constricted body and greater width at the cutting edge. It is therefore necessary to trim away a portion of the enamel on the approximal surface mesially and distally until those walls are perpendicular for a short distance from the cutting edge. This can be easily done with a coarse disk, giving a point of contact to each tooth of about one-eighth of an inch.

Make the appliance in the following manner: For incisor bands a strip of platinum plate about No. 40, B and S gauge, is cut straight and three-sixteenths of an inch wide. Place it about the tooth to be banded and grasp the ends with a pair of flat-nosed pliers. Burnish the lingual portion to shape and crimp the ends tightly with the pliers over and against the labial portion of the tooth, forming a close joint. For the cuspid teeth, if used for abutments, the bands should be of rolled gold and platinum 36 g., same width as the others but curved to conform to the conical shape of the tooth. The joint should be on the lingual side.

(In case two laterals are to be used for abutments the process would be the same, using the rolled gold and platinum for greater strength and where the band is to show.) Solder all bands with 22 k. solder, taking care to keep it from flowing away from the joint to the under surface of band. After soldering place the bands in position on the teeth, fit them and burnish to place. Trim away with curved scissors the gingival portions of the band mesially and

distally, leaving points of contact of about one-tenth of an inch, excepting the abutment bands which may be left wider for greater strength.

The fitting and trimming completed, the bands are placed in perfect position on the teeth and drawn off with plaster impressions. If the teeth are very loose care must be taken not to immerse too deeply in the plaster. Any bands failing to come away are removed and placed in position in the impression. Paint the inner surface of the bands with a thin solution of plumbago and fill with investment compound. The bands are now in their proper relative position on an investment model. With 18 k. solder catch them together slightly on the lingual surface, enough to prevent any breaking or displacement while fitting the reenforcing plate. The latter is best made of thin clasp metal closely fitted and bent down into all the approximal depressions and extending to joints of the abutment bands. Hold in position with a pair of curved soldering pliers, and fasten it to the bands with 18 k. solder, filling all spaces and drawing the solder well over the joints of the abutment bands. Turn the model over and fill the V-shaped spaces on the labial portion with solder and the appliance is ready for finishing. Boil in dilute sulphuric acid, and polish the lingual side, using carborundum stones and disks in the engine. Polish the solder work only on the labial portion of the bands not used for abutments, and cut away the remaining portion. The completed appliance should be worn for three or four days before cementing permanently in place.

Now to consider the second class of cases mentioned. Construct the appliance described, and the reenforcing plate affords a strong support to which the plate teeth can be soldered. It is necessary only to place the retainer in place and wax the teeth in position, remove, invest and solder. The two-fold object of retainer and bridge is combined in one piece of work, and if no mistakes have been made in the details of the operation the result will prove most gratifying.

For the third condition I mentioned, the advantages of this kind of a bridge can be readily seen. It is not always necessary to go so far back as the cuspids to obtain anchorage. In taking impressions for removing the bands the V space where the teeth are absent should be filled with wax from the gum ridge to the cutting edge of the adjacent teeth. Then if the bands are not carried below the

point of contact of the respective teeth there can be no difficulty in removing the plaster.

When we consider the great number of cases presented where the lateral inclination of the teeth is so great that a plate cannot be closely fitted to the gingival border, or the usual bridge depending upon post extensions into root-canals to hold it in place, it would seem that the appliance I have described must prove most valuable.

TO PREVENT PAIN WHEN INSERTING HYPODERMIC NEEDLE.—The spot where the needle is expected to enter is touched with a toothpick dipped in strong carbolic acid; a white spot immediately appears (due to coagulation of the albumen in the tissues.) Shortly after a perfect anesthesia of the spot is manifest and the hypodermic needle can be pushed through the skin without pain at this point and the infiltration of the tissues begun. If a large arc is to be injected several spots are marked with the toothpick dipped in the strong carbolic acid, the needle being inserted through these points.—*Med. Standard.*

FACIAL NEURALGIA DUE TO A HAIR IRRITATING THE MEMBRANA TYMPANI.—A. Percy Allen reports the case of a man aged twenty-one years, who had suffered from acute paroxysmal neuralgia for three months. Having excluded dental and ocular causes, the ear on the affected side was examined, and the membrana tympani was seen to be much injected. By means of the auriscope a hair was discovered lying along the meatus, and was pressing with its end on the tympanic membrane. It was removed and the patient immediately experienced relief. After a day or two the attacks of pain entirely ceased.—*Brit. Med. Jour.*

DEFECTIVE METABOLISM IN RELATION TO MUCOUS MEMBRANES.—H. D'Arcy Power finds a class of patients with various disturbances of the mucous membranes, referable to defective metabolism. Sometimes the buccal mucosa becomes dry and studded with discrete masses of hypertrophied epithelium. In one case patient suffered for three weeks from emaciation due to anorexia, but was cured in three days with benzoate of ammonium. In other cases he finds defective activity of the mucous membranes One such case has been under his care for several years. All the mucous surfaces are alike affected; the buccal, nasal and genito-urinary surfaces being always dry, unless stimulated by an occasional catarrh. The condition appears to be congenital and systemic in its origin, not due to a local neurosis. Such general conditions call for remedies of extended activity, and among these pilocarpin in small doses should have a foremost place. It not only increases the general metabolism of the body, as shown by the rise in the excretion of urea, but it specifically affects the mucous membranes and glands. Lastly, he refers to the value of capsicum as a promoter of systemic metabolism, as well as a local stimulant. We know that it increases alimentary leucocytosis, and possibly in this way it affects general nutrition. Its possibilities in this direction are not utilized to the extent they deserve.—*Pacific Med. Jour.*

Digests.

ARGUMENT FOR MEDICAL EDUCATION OF DENTISTS. By Eugene S. Talbot, M.D., D.D.S., Chicago. A woman, aged 27, came to me in November, 1900, through her physician, for advice and treatment. She was a proof-reader for a magazine. She weighed ninety-four pounds, and her assimilation was poor; had cold hands and feet, and was awakened about three a. m. with cold extremities and could not get to sleep except by wrapping her legs and feet in a woolen blanket. A year ago peritonitis from exposure to cold and coincident low vitality resulted, from which she recovered. Her mouth and teeth were so sensitive that eating was a torture. On application to a dentist, he, finding the teeth sensitive, applied arsenic and destroyed three pulps in small superficial cavities. The treatment did not seem logical to the woman, since every other cavity was as sensitive. The teeth in which the pulps had been removed were very sore. Upon tapping, the sound teeth were found equally painful with those whose pulps had been removed. Interstitial gingivitis of a low type extended throughout the entire alveolar processes. The woman was placed upon tonics. The gums and alveolar process were treated with iodin. Her vitality is gradually being restored. The interstitial gingivitis is lessening and the teeth are recovering their normal condition. Operations for filling, previously impossible, are now producing excellent results.—*International, March, 1901.*

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TO REMOVE TEETH FROM RUBBER PLATES. By T. F. Chupein, D.D.S., Philadelphia. The journals have, from time to time, offered many suggestions for this purpose. The only one which we have found *in part* effective has been suggested by Dr. Genese of Baltimore. He advises that the plate containing the teeth be placed in a saucepan and covered with glycerin, and this be set on the Bunsen burner to boil. This, from the temperature it takes to boil the glycerin, will so soften the rubber that the teeth may be removed from the plate perfectly clean. But although we have tried the plan, we have not found it to be entirely effective. There will be particles of rubber clinging to the pins and next to the shoulder of each tooth. This can be removed by taking the tooth

from the glycerin and holding it in a rag, doubled several times, when the adhering particles of rubber, around the pins, may be removed with a fine excavator; for the rubber is quite softened by the heat of the glycerin and manipulated in this way gives less trouble to remove than any other way that we have tried.

The plan which we have found that leaves tooth and pins absolutely free from all adhering rubber is to place the old plate in a sand bath. This may be done in a clean ladle and placed over the Bunsen burner in the chimney. The rubber will be all burnt off, while the odor of burning rubber, which is anything but pleasant, escapes up the chimney. When the rubber is all burnt off there will be a powdery residue around the pins which is readily brushed off with a stiff bench brush.—*Dental O. and L., March, 1901.*

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PROSTHESIS POINTERS. By J. J. Reed, D.D.S., Rockford, Ill. Read before the Northern Illinois Dental Society, 1900. Those of us who do plate work and make lower plates, especially a full lower, know the difficulty at times where the ridge is narrow of making satisfactory substitutes that can be used successfully for mastication with any degree of comfort. The difficulty lies in the thin, narrow ridge, and we have all seen cases where the ridge was very thin. The thought was to use small bicuspids and molars very narrow on the grinding surface. The idea is to make them small so the resistance will be less in mastication.

Prosthetic teachers have recommended large bicuspids and molars without discrimination, which is proper for upper plates which rest on the palate and gums too, or in cases of wide lower ridge. But in cases where the ridge is narrow it should be favored by small grinders which will part the food with more ease than larger ones, and it seems reasonable to suppose that the food will be better masticated and with less injury to the gums than with larger teeth. We have all noticed the absorption of the front upper ridge in cases where there were only the lower incisors, also the continual settling of lower partial sets, so it seems plain that the smaller teeth would be more favorable to the thin lower ridges, but use as large teeth as in your judgment the ridges will stand, as indicated by their being wide or narrow.

The other thought was on articulation in regard to long or short cusps. Where there is scarcely any ridge at all in lower or in upper

cases, where the plate is liable to be thrown or lose its suction, use short cusps or grind them off almost entirely. If we could anchor our plates as immovable as the natural teeth we could use any length of cusp that we wish, but in cases of flat lower ridge the long cusps will interlock, and the wearer is required to bite exactly right, else it may dislodge the plate. The application of these two thoughts helps the patient to learn the use of the plate quickly and saves both patient and dentist annoyance.—*Review, March, 1901.*

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"VACUUM CAVITIES." *A Criticism.* By L. P. Haskell, D.D.S., Chicago. The *Items* has an interesting symposium on vacuum cavities, consisting of twenty-one articles by prominent dentists. There is every shade of opinion, from those who can not succeed without them, to those who find no use for them. Dr. Geo. B. Snow covers the ground completely, showing that it is adhesion, not suction, that is needed, and this is applied over nearly the entire surface of the jaw. Another writer, who advocates strongly the necessity for the use of the vacuum cavity, wrote me in a letter in 1888 to this effect: "Vacuum chambers are a relic of the past and I believe and hope their day is nearly over. They are unscientific, unnecessary, inadvisable, non-hygienic and injurious to the tissues," all of which I concurred in then and have never since seen any reason to think otherwise.

Another says (and right here hinges the whole thing): "I do not see how anyone who advocates relief spaces can object to vacuum cavities, for really there is no difference." There is all the difference imaginable. The "relief" is not intended for suction, does not aid it; in fact, the plate adheres just as well without, provided it does not *bear* upon the hard center. It should cover the entire hard surface, except at the posterior margin, for the width of one-quarter inch, and without a defined margin, which would be essential for *suction. The object to be attained is to prevent the plate rocking.* It must be borne in mind that the palate is the only portion of the jaw that never changes, while the alveolar process does, especially under rubber from its non-conductibility. Unless provision is made for this change by raising the plate over the hard center, it is only a question of time when the plate will inevitably rock and then there is trouble.

Now on the other hand, if a "vacuum cavity," so-called, is used

it must have a well-defined margin in close contact with the membrane, so the air can be exhausted. The anterior and posterior margins of this vacuum rest upon the hard center, and when the ridge settles the plate rocks, and herein is the mischief of the vacuum cavity. So it does not do to affirm that the "relief" and the "vacuum cavity" are the same in effect. When a *theory* is backed up by twenty-five years of plate work, following thirty years of use of the vacuum cavity, I can't see what further argument is needed, and if anyone can show more difficult cases than my models I should be pleased to see them. The *hard* center is found in 98 per cent of mouths. In two per cent there is a *soft* condition, with usually a crevice. In these cases no relief is needed, but the plate is fitted to every portion of the surface.— *Ohio Journal, March, 1901.*

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CAUSES OF LOSS IN WEIGHT OF PLATINUM. The various causes of the loss in weight of commercial platinum when heated under certain conditions may be summarized under seven heads: (1) Platinum is dissipated when it is made the cathode for the spark from an induction coil, alike in air, in vacuum, and in hydrogen; the phenomena are purely physical or mechanical. (2) When platinum is heated in a Bunsen gas flame sufficiently reducing to deposit some carbonaceous matter on the platinum a loss occurs, and is attributed to some constituent of the gas. (3) The same takes place in the ordinary smokeless Bunsen flame. (4) Platinum is dissipated when strongly heated in a furnace for firing porcelain. (5) When heated in a combustion tube in air, and (6) when heated by an electric current the metal is affected. Edison noted in the last case that glass surrounding the wire became covered with a mirror of what he assumed to be metallic platinum, but that the loss ceased when a perfect vacuum was made. Berliner explained the phenomenon when he proved that platinum which had been exposed to air gave up gas when heated in a vacuum; that while doing so the metal was dissipated, giving a deposit on the surrounding glass cylinder; and that this ceased when gas was no longer given off. Hence, he concluded that the action was purely mechanical. (7) When platinum is heated before the blast-lamp it loses weight. This was observed when using platinum crucibles for the conversion of calcium oxalate into calcium oxid; the crucibles lost weight so rapidly that even an approximate constant weight could not be

reached. Experiments show that the loss is due to the chemical action of oxygen, that certain elements are fractioned out of the impure platinum, and that the loss is not due to water-gas, as has been suspected, except in so far as this gas is likely to give a hot and strongly oxidizing flame when used in burners having an air supply. The behavior of platinum when heated under the last five conditions may be explained by the hypothesis that a volatile oxid of platinum is formed stable at high and low temperature, but unstable at intermediate temperatures, like the platinous chlorid $PtCl_2$ of Troost and Hautefeuille. If, as is the case in the blast-flame, the compound is swept away, the metal loses weight. If, on the contrary, the flame is a quiet one, as is the case when a crucible is heated in a Bunsen flame, and only a part of the metal is very strongly heated, the hypothetical oxid decomposes at once on emerging from the most strongly heated zone, and the platinum is deposited on the cooler part of the crucible, producing the molecular change of the surface, without gain or loss of weight, noticed by Erdmann and Crookes.—*Jour. Amer. Chemical Society.*

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FIXATION IN FRACTURES OF LOWER JAW. By Dr. Giuseppe Piersantelli. The method here described is an invention of Signor Bertoli, a dentist in Bologna. The author reports a case of compound comminuted fracture of the lower jaw in which he tried this method with great success. The apparatus should not be applied until a day after the injury, in order to give an opportunity for thorough washing and disinfection of the injured parts. It can be used in both simple and compound fractures of the lower jaw, and prevents the formation of a deforming callus or malposition of the fragments. It may be applied and worn without interfering with the motion of the jaw or with mastication. The patients tolerate the apparatus well; the more so because by means of a screw they can regulate the amount of pressure exercised upon the bone. The apparatus consists of a cap of silk or linen fitting the top of the patient's head and provided with chin straps with buckles, passing in front of the ears and fastening under the jaw. The chin straps are also provided with rubber elastic bands which tend to hold the cap taut when applied. The straps passing from the cap are attached to a nickel-plated metallic chin piece or shield, which is adjusted in front of the lower jaw, is padded so as to adapt itself

perfectly to the chin, and is provided with two elastic straps passing horizontally backward and clasping in the back to the neck, thus preventing a forward displacement of the chin piece. To the front part of the chin piece is soldered a horizontal metallic bar, which can be lengthened or shortened at will by loosening a screw which holds an extension-piece entering into the hollow portion of this bar. By means of another screw a vertical bar is attached to the first; passes upwards and terminates in a curved arm passing over the teeth and provided with a small screw. A dental splint of the regular horseshoe pattern constitutes the last part of the apparatus. This splint is made of hard rubber and its under surface is reenforced with a plate of perforated metal. Into the hollow of this splint Stent's paste is poured, after having been melted to a sufficient degree, and the splint is applied over the teeth, care being taken to see that the line of teeth is regular. The paste must not be too hot, or otherwise it may injure the soft tissues; nor too cold, for in that case it will not adapt itself perfectly to the line of teeth. The little screw is next screwed into the plate which has been affixed to the top of the middle portion of the hard-rubber splint. The other screws (of the vertical bar and horizontal bar) are then adjusted to regulate the compression exercised from below upward in front of the chin piece, pressing the teeth with their splint toward the point of the chin. The results obtained in this case leave no doubt as to the utility of Bertoli's apparatus.—*Gaz. Osped. Clinic.*

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MORE ARTISTIC AND SATISFACTORY RESULTS IN OPERATIVE AND MECHANICAL DENTISTRY. By W. H. Taggart, D.D.S., Chicago. Read before the Northern Illinois Dental Society, 1900. In these modern days do not let your patient be the first to suggest to you that a porcelain filling would be a very satisfactory one for her unsightly, badly filled incisor; suggest it yourself; for if you let her suggest it and finally make a success of it she is apt to think she is the originator of the process and take away your glory. Suggest these things to the patient yourself, and you will soon create quite a demand for a class of work for which you thought there was no demand. Do not say to your patient "they are not practical, I tried one and it was a failure." Haven't you had many a gold filling fail, and where would the most skillful gold filler be to-day if he had passed verdict on any material or

process because he had tried it once? Patients are not fools, and if you cry down an artistic process which has gradually become popular with progressive dentists, you show only your lack of ability and not superior knowledge, for this work has come to stay, and the sooner you sit up and look intelligent on the subject the sooner your patients who may never need a porcelain filling will begin to think you are more than an ordinary man in your profession. But use good judgment as to where you put them, and always be ready to take off your hat to gold as a filling material; in other words, they have at present a limited field, and should be used where the artistic result is paramount to all others, not that they are weak or lacking in saving qualities, but because gold has all the good qualities except the artistic one. Do not try to do this work in a half-hearted way, and when through say, "There, I told you it was no good," for you will never succeed; but go at it with the understanding that it is going to tax the full capacity of your skill and patience.

Another thing I wish to call your attention to. If you have not already started making and using an all porcelain crown do so at once, for you will have to come to it sooner or later, as it is the coming crown, and five years from now you will be ashamed of your gold crown and bridge-work. Do not offer trivial excuses for not using them, because that shows more than anything else your lack of ability to make them.

Do not extract the last lower tooth in any mouth if it has any kind of a healthy attachment to the jaw. I would not allow the best dentist in the world to take out my last tooth on the lower jaw. Clasp it properly and you will get the blessing of a grateful patient; extract it, and the chances are you will have to make excuses about full lower plates the balance of your days. Lower partial plates can be made the most satisfactory of any plate worn, and yet how unsatisfactory the majority are, moving up and down at the slightest change of the muscles of the tongue or cheek, and only becoming comfortable after they have been ground so as to be too short to be useful. Clasp one or two of the lower teeth properly and you may perhaps prevent an intelligent patient from patronizing another dentist who knows his business. In these clasp plates always have a lug extending on grinding surface, so as to prevent clasp from injuring the tooth, and also because patient can bite fifty per cent harder, there being no undue stress on the soft tissues.

It is hard enough to hold our patients, do the best we can, but don't lose one because you can't make a satisfactory lower partial plate. Remember our desirable patients as a rule are intelligent people, and if you do not master these artistic and practical details they will shortly look for and find some one who will, and you will lose a good patient solely from your lack of ability.

Set all your banded crowns and bridges with pink base plate gutta-percha. First, because it acts as a cushion between the crown and root, and if any undue strain comes it will yield before it will break. It tends to cushion the blow. Second, you can be more uniformly successful and no haste is necessary, and third, as no haste is necessary, it takes away nearly all of that nerve strain which always accompanies the setting of a crown or bridge with cement. Fourth, the crown or bridge can be taken off at any time within five minutes for repairs or to fill an adjoining tooth; certainly a sufficient number of reasons for at least trying the process, which, if successfully mastered, will wean you forever from setting crowns or bridges with cement.—*Review, March, 1901.*

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NON-SPECIFICITY OF MICROORGANISMS IN DENTAL DECAY. By J. Choquet, D.E.D.P., F.M.P. Read before the Odontological Society of Great Britain. Every one admits to-day that dental decay is of microbic origin, and that the affection can be produced only by the combination of different actions according to the chemico-parasitic theory.

This theory being recognized as the only true one, it is quite necessary to establish very clearly certain points inherent to this affection. One of the most interesting is to prove that, in contradiction to the opinion of a few authors, there is no specific microorganism of dental decay. This work is the prelude to others in which I will show good proof that the greatest number of microorganisms found in saliva or elsewhere can produce the histo-pathological disorders which we are accustomed to see.

What is the reason for the non-existence of a specific microbe in dental decay? The answer is found in clinical observation, in microscopical examination and, above all, in the cultivation of pieces of softened dentin. Let us consider this affection in its entirety; how can we define it? According to the definition given by Dr. Fray, dental decay is a *local* affection proceeding *always from* without

inward, from periphery to center, and never from center to periphery. What is generally the characteristic property of real specific microbes? It is to produce disorders, alterations of tissues which nearly always proceed from center to periphery, and produce symptoms visible to the naked eye in a period of time nearly always the same. Such are, for example, typhoid fever, cholera and tuberculosis. Besides, and above all, if in these diseases we take a few drops of blood or of an organic liquid, and examine them just after death with the microscope, using specific stains, or if we cultivate these drops of blood in an artificial medium, we always find the species corresponding to the illness and its generator. We can not say that we could not find at the same time other species of microbes, as we know that generally (e. g. tuberculosis) a microbic association will take place; but in these cases the microbic elements, differing from the specific ones, will be only *secondary* microbes.

Is it the same in dental decay when we inoculate a portion of decayed dentin in bouillon or in a nutrient medium? Not at all. We will find always a true microbic association, and in certain cases this one will be very numerous. So, again, if we examine a section of decayed dentin, we will see a very great number of microbes (micrococci, bacilli, threads). We are among the first to recognize that it is impossible to isolate a microbe by microscopical examination alone; nevertheless, without expecting to intensify it we can with the microscope make the distinction between a micrococcus and a bacillus or a thread. So, if we examine a section of decayed dentin, even with low powers, we shall never find just one species of micrococcus or bacillus, but always microbic association. Sometimes the cocci will be in greater numbers, sometimes the bacilli, according to the portion of dentin examined, whether from near the surface or from deep in the structure of the tubuli. Some species may preponderate, and we must consider that the microbic antagonism which must exist in the tooth, just as in the body, governs the preponderance of either the cocci or the bacilli.

Besides, these microbic elements, when separated and studied *separately*, can produce again the disorders observed in the affection. I do not say each one can do so, but a great number can. Thus, the first point is: Dental decay is of polymicrobic origin. Now, if we consider the processes of this affection we see that the disorders are produced during two phases which, as we know, are

quite different. (1) Decalcification of the hardest tissues (enamel.) (2) Digestion of tissues which can be softened without disintegration like that which is produced in enamel. We base ourselves always on the chemico-parasitic theory; and here, which are the effective causes? The microbes only. They can act directly or indirectly by their products. The first phase will be to break up the exterior coverings of the tooth, represented by enamel and its cuticle. The second phase is when the enamel has been broken up, to disorganize the subjacent tissues represented by the dentin. Are these two tissues the same in composition, and do the microbes act in the same manner in these two cases? No. In the first one they act indirectly, by their products, and in the second case they act directly. In the first one they have to decalcify, to break up a mineral body, and in the second they have to act upon an organic one.

And at this moment dental decay is appearing with all its crowd of histo-pathological disorders. We have not to consider the first stage of decay, but only the second; the attack on the dentin. Which are the effective agents of this one? Is it the Leptothrix racemosa, so well described as the decalcifying agent of enamel? We do not think so. Our absolute conviction is that this Leptothrix racemosa must disappear entirely so soon as a door is opened in the dentin, and that the destruction and penetration of this one will be occasioned by other varieties of microbes, pathogenic or not, but by microbes of a minute size corresponding to the diameter of the canaliculi at their end. It is the same for the L. racemosa as for the ordinary leptothrix, and we say, "To make it appear that the leptothrix threads penetrate the dentinal canaliculi is absolutely irrational."

But where do these microbes of minute size have their birth? They come from the saliva only, a liquid in which they grow, in which they are contained, in which they find the nutritive material necessary to their life and development, as oral epithelial cells, food fragments, saliva in which the teeth are bathed. No, there is no specific microbe in dental decay, *as the starting point of contamination is the saliva*, and in this we find every sort of microbe (micrococci, bacilli, threads). And the best proof that there is no specific microbe is in the fact that not one of those who have studied the question has found a microbe discovered yet by one of his competitors. I do not speak of simple species, as staphylococcus, mes-

entericus, etc., but of strange species seeming to present special properties. The microorganisms described by Miller are not the same as those described by Galippe and Vignal. Those studied by Mr. Goadby are not the same as mine. Those of Black are quite different from those described by Weillan. If really a specific microbe did exist it would have been described by one or more of the investigators And finally, how can we explain that certain decays are white, others yellow, reddish, brown? If there were a specific microbe the coloration would be always the same.—*Brit. Jour. D. Sc., March, 1901.*

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CERTAIN CHEMICAL AND PHYSICAL CHANGES WHICH TAKE PLACE DURING VULCANIZATION. By S. H. Guilford, D.D.S., Philadelphia. Vulcanizable rubber as used in the construction of dental plates is composed of caoutchouc and sulphur, about 75 per cent of the former to 25 per cent of the latter. In addition there is usually incorporated a certain amount of coloring matter. In manufacture the caoutchouc and sulphur are first combined mechanically by kneading, but a more thorough union is effected later, when in the process of vulcanization a temperature is reached sufficient to melt the sulphur. The sulphur is added to the caoutchouc in order to produce certain physical changes in the latter which could not be brought about without it.

Caoutchouc is a hydrocarbon consisting of C_9, H_7. When heated to a temperature of about 235 deg. F. the sulphur incorporated with it melts and most of it combines with the hydrogen of the caoutchouc to form the gas, hydrogen sulphid (H_2S), which escapes. The remaining full equivalent of carbon and decreased proportion of hydrogen and sulphur under the influence of a higher temperature are converted into a new substance termed vulcanite. If in the process of heating the temperature is raised slowly, all of the H_2S will escape and the resultant product be uniformly compact and dense. If, on the other hand, the temperature be raised rapidly the outer surface of the mass will become dense and hard from its loss of H_2S, and prove a barrier to escape of the gas from the inner portions. The result will be porosity of the central portion of the mass. Even though all of the gas should succeed in escaping the mass will still be porous unless pressure be applied to obliterate the small spaces formerly occupied by the gas.

From this we see that two conditions are necessary to successful vulcanization, namely, slow heating and continued pressure. Even with these, however, good results are not uniformly obtained, for while the mass may be thoroughly vulcanized it often happens that a space exists (in the making of a dental plate) between the plate and the teeth. This is due to contraction of the vulcanite in cooling, which is sometimes so great as to cause the teeth to rattle when the plate is shaken. The condition is one which has often annoyed practitioners who have been at a loss to account for it. In 1890 Dr. Geo. B. Snow began experiments to ascertain the cause of this shrinkage and to discover means to prevent it. The results were published in a pamphlet issued soon afterward. By a simple experiment he ascertained the character and force of the rubber expansion and the amount of its subsequent contraction. Taking a cube of beeswax he imbedded it in plaster; after removal of the wax the hole was solidly packed with the ordinary red vulcanizable rubber, closed with a suitable clamp and vulcanized at the usual temperature. Upon opening it was found that the expanding rubber had cracked the mold at each of its angles and injected fins of rubber into them; whereas the sides of the block of vulcanite were distinctly concave and did not touch the plaster mold.

Subsequent experiments proved that the expansion could be provided for and the contraction prevented by placing spiral springs under the nuts of the flask bolts. By their action the flask would open slightly during the expansion stage and allow surplus rubber to escape, while during the period of contraction the springs would operate to close the flask and produce the desired pressure upon the contained rubber. Plates vulcanized under these conditions showed the rubber to be in perfect contact with the teeth and pins and solidly vulcanized throughout.

The same result can to a large extent be obtained without the springs by properly arranging the waste-gates in the plaster mold. Instead of cutting these gates from the border of the plate out to the edge of the flask, a simple channel is cut in the plaster from one-eighth to a quarter of an inch deep next to the flask and around its entire circumference. This channel should grow shallower and terminate before it reaches the edge of the plate, thus leaving a narrow portion of plaster untouched. While the flask is closing the surplus rubber will flow over this plaster edge into the deeper

channel, but when closed it will effectually prevent any more from escaping and exert a pressure that will compensate for the subsequent shrinkage of the rubber mass. This natural contraction of the rubber during the late stages of vulcanization and cooling, if not counteracted as suggested, will often so change the form of plates as to produce a misfit. Doubtless many cases of ill success have resulted from this cause when all other customary precautions have been taken. Vulcanization at a lower temperature and for a longer time will also give us more perfect results than we are accustomed to obtain by the method commonly employed. Vulcanite as a base for plates would not be open to so much criticism and objection if its chemical and physical properties were better understood, and if it were manipulated with the same care and skill as is bestowed upon it in other commercial lines.—*Stomatologist, March, 1901.*

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ARISTOL WAX AS A ROOT-FILLING. By Otto E. Inglis, D.D.S., Philadelphia. Parafin and beeswax have both been urged by members of the profession as materials suitable for the filling of root-canals, particularly in those cases where there is a reasonable doubt of the thoroughness of preparing the finer canals of multi-rooted teeth for a permanent filling material. To increase the effectiveness of these waxes an equal bulk of iodoform or the less odorous aristol is usually added. The wax is supposed to mechanically arrest the passage of bacteria from the cavity of decay into the canals and apical tissues and the entrance of effusions into canal from the apical space, and the antiseptic is added for the purpose of inhibiting the action of any bacteria that may accidentally have been left in the canals or dentinal tubules.

Well-known authors have advocated the use of these materials, of whom we may mention Burchard as espousing parafin, and Tomes who advocates wax and iodoform in combination. Tomes touches the point upon which I wish to dwell in this article when he says, "Upon opening teeth filled with parafin I found the roots empty, and therefore substituted wax and iodoform as having a higher melting point." He attributes this result to absorption of the parafin by the dentinal tubules.

Having had some experience with both materials, I offer them to those who may have been influenced to try them with disappointing results. When parafin came into vogue I began its use, for it

seemed suited to the class of cases termed uncertain or doubtful, or in which the use of the more solid materials, such as oxychlorid of zinc and gutta-percha, seemed risky. There seemed to be no trouble in pumping the parafin to the end of the root with a root-drier, so I usually adopted that course. Experiments were made by opening the canals of a molar as well as possible in the hand, which was thoroughly accomplished for the distal canal, and fairly well for the two mesial or buccal canals. In order to simulate natural difficulties, the finger was then tightly placed over the root to be filled, a ball of the material was placed in the pulp-chamber, and the hot drier pushed into it; it melted and with a pumping motion was driven into the root. In the case of the distal root the parafin went to the canal end and took an impression of the epithelial markings upon the finger-end. In the finer roots it went only so far as the canal was opened. This was easily determined by holding tooth to the light. Satisfied with this result, it was used in the canals of teeth in the mouth. Of course some excess would be left in the pulp-chamber or even on the walls. In excavating to remove this excess so many root-fillings were pulled out entire, presenting a correct cast of the root interior, that no doubt seemed left of the completeness of the root-filling. The annoyance from this mishap was so great, however, as to compel a change to wax. Later, upon opening some teeth filled with parafin the roots were found empty. For a time absorption by the dentinal tubules seemed the only explanation. Extra-oral experiments with wax in the roots of the molars were apparently as satisfactory as those with parafin, so confidence was placed in the root-fillings, and it was advocated in the clinic and used in my practice. One day, while demonstrating its use extra-orally, a central incisor with a large canal was used. The filling was not perfect to the apex until the third or fourth melting and pumping. Thereafter in the mouth in the larger canals, after melting, a Swiss broach was passed in to determine the result. The broach in some cases would demonstrate by its sudden plunge into an empty space, which would be found anywhere from the mouth of the canal to a point half-way up, that the canal was not well filled. It seemed proven that the capillary attraction of the canal-walls for the wax was greater than that of the drier and the wax, and that the silver point would be partly stripped by that action. When a canal plugger was used to pack the semi-hardened wax into

the upper part of the canal, and the drier reapplied, the root would be well filled. If the end of silver probe were made flat the pumping action could be made to carry the wax to the root-end, and the patient made to feel the impact of the material upon the apical tissue. The broach in such cases received a waxy resistance when passed to the end of root. It was surmised that the fluidity of the material would permit a natural adjustment at the apex. This surmise the result seemed to warrant. In two cases removal of the wax seemed to be necessary for pathological reasons, and in these the drier was used to soften the wax which was partly removed by it. The drier was wiped off and reapplied, and finally the remainder of wax was removed with a barbed broach.

Touching the permanence of the wax *in situ* the following evidence is offered: A student was advised to fill a cuspid root with it. He did so and temporarily stopped the cavity. For some reason the patient did not return until a year later, when the cavity was found open and further decayed; a portion of the wax was gone at the mouth of the canal, but the apical half of the root was still nicely sealed, as demonstrated by the broach, and the wax was left in position. No trouble ensued upon sterilizing and sealing the remainder of root-canal and filling the tooth with gold.

The wax does not pull out as did the parafin. A perfectly dry root seems necessary to its best use, a moist root brings about much the same trouble as is experienced with wax in articulating teeth upon trial-plates in the mouth, i. e., the moisture prevents adhesion. The capillary attraction between semifluid substances and the canal walls is also the cause of difficulty in putting antiseptic pastes into large canals. A fine probe will pass and repass through the mess of paste and fail to carry it well in advance of it. If a plugger with a flat end is used so far as it will go and a smaller size succeeds it, a bulk of material is pushed ahead of the flat end and the work is facilitated. Cotton wrapped upon a broach may be used in place of a large flat-ended plugger or probe.—*Stomatologist, March, 1901.*

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TETANY IN INFANCY. By J. L. Morse, A.M., M.D., Boston. Christina E. was badly fed until she was eight months old, and had various digestive symptoms. During the next three months she was fed on modified milk and improved steadily. On Oct. 13, 1899, while her digestive canal seemed in perfect condition, she began to

shake her head constantly. On Oct. 16 she had two convulsions, after which her cheeks swelled. Her digestion was still normal. She had another convulsion on Oct. 18, and was first seen by me on Oct. 19. The general physical examination was entirely negative. There were no evidences of rickets. The hands were held intermittently in the typical position of tetany. There was no pedal spasm. The facial phenomenon was absent. Trousseau's symptom was present but not marked. Both cheeks were swollen and somewhat thickened. The gums were swollen over the lower lateral incisor teeth which had not erupted. She had one convulsion the night of Oct. 19, but none after that. Stiffness continued in the hands until Oct. 28. Trousseau's symptom was first absent on Oct. 30. During all this time digestion was normal and there was no loss of weight. The swelling of the gums was the same after the relief of the tetany as in the beginning. In this case there was no evident cause for the tetany except dentition. The swelling of the face, however, would seem to point to some toxic absorption from somewhere, although its source was not evident. It may have been in the digestive tract, although there were no symptoms of indigestion.

John M. was fed with great difficulty for the first seven months. After this he did very well until March 23, when he was fourteen months old. He then had influenza, as had the rest of the family. Abdominal symptoms were marked and profuse diarrhea developed. He did not do well and on March 30 the physician was discharged and he was given absent treatment by a clairvoyant. He was fed on albumen-water and beef-juice. He did not vomit and had a few green movements with mucus daily. The night of April 7 he had a slight convulsion and his hands became rigid, at first intermittently and then continuously. The morning of April 8 he collapsed, and the physician was called again. He was seen that noon. Physical examination: He was small and emaciated. The fontanel was very large. He had eight teeth. The two lower molars were bulging the gums, which were inflamed. The tongue was fairly clean but red. The heart and lungs were normal. The abdomen was full but not tense or tender. There was no enlargement of the liver or spleen. The hands and arms were in the typical position of tetany and the feet showed a tendency to spasm. Chvostek's symptom was present. Trousseau's symptom was not tested. Kernig's

symptom was absent. The patellar reflexes were not obtained. The temperature was 99 deg. F. It is possible that the teeth may have had some influence here in increasing the nervous excitability. The digestive disturbance, however, seems more important. It is possible, too, that the influenza may have been the first and perhaps the sole cause.

In these two cases the gums were distended by teeth. In one of them no other cause of tetany was evident. The gums were in the same condition, however, after recovery. In the other case influenza and diarrhea were also possible etiologic factors. It does not seem possible, therefore, that difficult dentition alone can cause tetany. It may favor its development, however, by exaggerating the excitability of the nervous system.—*Phila. Med. Jour.*

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REGISTRATION ESSENTIAL TO THE RECOVERY OF FEES. A case of considerable interest has recently been decided by the appellate division of the New York Supreme Court in Brooklyn. A physician named Michele Accetta had brought suit in the Municipal Court against Teresa Zupa, to recover for professional services rendered the defendant, and had received a judgment for $100. The answer of the defendant denied that the plaintiff was duly qualified, registered and authorized to practice medicine as a physician in the county of Kings, and appealed from the judgment rendered against her. The plaintiff proved that he was admitted to practice; he had graduated in the University of Naples, had passed an examination in the University of the State of New York, was licensed by the regent of that university in 1896, and had practiced medicine since that time. The defendant then offered in evidence the register of physicians and surgeons of Kings county, for the purpose of showing that at the time of the rendering of the services in question Accetta was not a registered or licensed physician in Kings county. This proof the trial justice refused to receive, saying that it made no difference whether the plaintiff was registered or not, and that the registry of physicians was only a police measure and did not affect a physician who was actually practicing.

The appellate division, in reversing the judgment of the trial court, said: "The court erred in holding that registry was not essential to recovery. The Public Health Law (Laws of 1893, chap.

661, sec. 140) provides that no person shall practice medicine 'unless previously registered and legally authorized or unless licensed by the regents.' Section 149 provides that the license shall be registered in a book kept in the county clerk's office. Section 153 provides that any person who violates the above provisions shall be guilty of a misdemeanor and subject to fine or imprisonment. * * * It is a settled principle that one cannot recover compensation for doing an act to do which is forbidden by law and is a misdemeanor. The contrary rule would make an absurdity. It would permit one to hire another to commit a misdemeanor, and would compel the payment of the contract price for doing what the law forbids. Whether this statute is wise or not we can not examine. It is enacted in the interest of the health of the public, to prevent incompetent persons from practicing as physicians. We must give effect to it. And we can not permit a recovery of compensation for doing an act which the statute declares to be a misdemeanor." The case is reported in 54 Appellate Div. Rep. page 33.—*N. Y. Med. Jour.*

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SECTIONAL BRIDGE HELD TOGETHER BY SCREWS. (See illustration.) By Dr. C. S. Gore, Baltimore. Read before the Maryland State Dental Association, Nov. 1900. In describing the same he said that bridging where the lines of the two abutments are parallel

is a very simple operation, but where the lines of the abutments are not parallel and can never be made so it is quite a different matter. The object of the sectional bridge is to overcome the necessity of grinding the abutments until they become cone-shaped and in many cases extremely sensitive.

In a case where the two teeth to be used as abutments lean toward each other his plan of construction is as follows: Prepare each abutment and crown separately, without regard to the other. With both crowns in position on the teeth take plaster impression and bite at the same time. Divide the impression first; remove the anterior half of the impression, then the posterior; then place the parts together and set the two crowns in the impression and pour

the model with plaster and sand. Now fit the dummies to the abutments and invest model and all. After soldering all together drill two small parallel holes through the thickest part of the dummies, and with a very fine ribbon saw bisect the piece at about a right angle to the two parallel holes. Place the two parts in position in the mouth and enlarge the holes with oiled burs. This will overcome any contraction which may have taken place during soldering. Remove the parts from the mouth and cut threads in the holes and make screws of heavy platino-iridium wire. Set both sections at one mixing of cement and place the screws in at once.

The manner of making a bridge for cases of this character was a new one as far as the author was aware, and he was very glad to offer it to the profession, as it lessens the sacrifice of tooth-structure and promises more permanence to the abutments, and consequently to the usefulness of the bridge.—*Cosmos, March, 1900.*

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NASMYTH'S MEMBRANE. By A. H. Smith, M.R.C.S., L.R.C.P., L.D.S., Eng. *Origin.* This tissue, which has recently been studied afresh microscopically, is now known to have its origin as an epiblastic formation of the external epithelium of the enamel organ.

Distribution. Situated externally on the free surface of the unworn enamel of man, monkey and sheep, is found under suitable conditions Nasmyth's membrane. This is the "cuticle of the enamel" of the older writers. It has also been incorrectly termed "persistent dental capsule." It is a thin continuous tissue spread flat over the enamel, dipping into the naturally-formed pits and fissures on the surface, and limited in extent by the cervical portion of the tooth, to the edges of which it is attached. In a well-developed adult premolar its measurements are 29 m.m. in its widest part, 19 m.m. in the narrowest, and 26 m.m. round the cervical region of the tooth. All teeth possess the membrane in a more or less complete condition. Even senile teeth when treated with a decalcifying solution to remove the enamel have traces of it, but it is best observed in those teeth which, while still unerupted (premolars, for instance), have been removed for the treatment of irregularities, because in this case the cellular layer is undamaged, though it may be injured during the act of extraction. Portions of the cellular layer may remain attached to the inner aspect of the

dental sac, which as a rule also comes away with the tooth. According to Kolliker it measures in thickness from 1-25,000 to 1-12,500 of an inch. Easily detached by the action of strong acids, it is only when Paul's method of preparing specimens is adopted that its real normal structure is ascertained.

Histology. Nasmyth's membrane consists of two parts, (1) an outer cellular portion, and (2) an inner structureless translucent lamina or pellicle. These are both intimately adherent, not only to each other, but also to the free ends of the underlying enamel prisms. 1. The cellular portion is interesting inasmuch as its structure is made up of a layer or layers of large polygonal flattened epithelial cells, with pronounced nuclei. It is quite possible and most probable that the cells are more than one layer in depth. Many sections when correctly stained exhibit such a dense pattern of cells that this belief in the multiplicity of layers is no doubt well founded. It is doubtful, however, if more than three layers ever exist. The double or treble layers are not observed all over the surface of the pellicle, but only in those situations where the membrane dips down deeply into the pits or fissures of the enamel, and here too the pellicle itself is apparently thicker than elsewhere. The protoplasm of the cells is faintly granular. Under high powers, the spongioplasm and hyaloplasm may be clearly defined. (The "spongioplasm," according to Schäfer, is a reticulum or network of protoplasm in the cell substance; and "hyaloplasm" is the name applied to the substance which occupies or fills its meshes.)

Paul attributes to the cells an average diameter of 1-2,000 and a length of 1-1,000 of an inch. Cells having "cogged" outlines are seen constantly, and in places the polygonal cells are flattened, probably by mutual pressure, in one or more lateral directions, and may thus assume a cubical or even cylindrical shape. The nuclei are particlarly large compared to the size of each cell, are ovoid in shape or nearly round in outline, and possess faint nucleoli. These are usually single, and often contain in their interior, as well as near their exteriors, one or more vacuole-like, bright, shining globules.

2. The inner or subepithelial layer is a delicate continuous membrane, apparently without histological structure of any kind. It is translucent, elastic and cornified, and resists the action of acids in a similar way to the Sheaths of Neumann or the linings of Haversian canals. On its under surface, i. e., the part nearest enamel, a

reticulated pattern can be fairly easily demonstrated. This corresponds to and is probably produced by the free ends of the enamel prisms, which have left their hexagonal impressions on the membrane. It is to be noted that the hexagons of the pattern have sharp, clear margins made up of straight outlines, correspond in size to the diameter of the enamel prisms, and in no way approximate the size of the epithelial cells, being "at least ten times too large for the enamel prisms." (Paul.)

In sections of Nasmyth's membrane which have been obtained *in situ* it has been possible to find in the deep enamel pits lacunæ similar to those of cementum or bone surrounded by a capsule, and apparently associated very closely with the translucent layer of the membrane. Tomes has repeatedly seen this condition. How these encapsuled cells get into the pits or fissures is not quite clear. There is an occasional appearance noticed in teased or spread-out sections of the membrane of the cells being arranged concentrically round certain tiny spaces, and it may be that these represent in some way the spots where encapsuled lacunæ may be deposited. A lacunæ may perhaps represent a persistent retained and imprisoned cell of the stratum intermedium of the enamel organ where, owing to the formation of the cusps of the teeth, an involution of this layer of cells has taken place; or it may represent an aberrant cementoblast which has likewise remained unatrophied or unabsorbed.

Fresh research on this matter is needed before a dogmatic opinion can be expressed. At all events it is now perfectly established that Nasmyth's membrane can be regarded with certainty as an epithelial remnant of the external epithelium of the enamel organ, and thus the theories of Waldeyer, Rose and others are now to be considered correct.—*Brit. Jour. Dent. Sc., April, 1901.*

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ERYSIPELAS TREATMENT. By G. Lenox Curtis, D.D.S., New York. In 1889 I worked out a method of treating erysipelas by which the positive germicidal action of sulphate of soda in connection with oxygen was conclusively established. I found the sulphate had so great an affinity for oxygen that when applied to a part affected by erysipelas the germs that produce the disease were deprived of sufficient oxygen to maintain life, and in a few hours were dead and resolution had commenced. My experiments in this line were wholly clinical, and I derived so much satisfaction from

them that I have depended altogether upon this method in the external treatment of this disease. The treatment consists in thoroughly cleansing the part affected, particular attention being given to the removal of all greasy substances. Mix with cold, distilled water a sufficient quantity of sodium sulphate to make it the consistency of a thick poultice. Cover the diseased part with a single layer of gauze or coarse cheesecloth and over this spread a thick layer of the soda, being sure that it extends considerably beyond the margin of disease. To keep the poultice in place, cover the whole of it with a layer of the material used to cover the diseased surface (cheesecloth or gauze), and secure it in such a way that it cannot be displaced. Ice-water must now be applied to the poultice for the double purpose of producing coldness and moisture, the object being to reduce the inflammatory action and to prevent incubation. When the disease is on the face I insert tubes in the nose or mouth to allow free breathing, and am very careful to pack around the tubes. I have found that from six to eight hours of this treatment is sufficient to destroy all the germs present. However, should there be any manifestation of their return, or that they have not been thoroughly eradicated, repeat the treatment. It has occurred to me that possibly this treatment might be effective in other skin diseases. If so, it has a great advantage over icthyol and the iron preparations, as it does not produce the disagreeable discoloration that follows their use. I have repeatedly demonstrated this method to physicians and it has received their approval and commendation. My attention has lately been called to the fact that when some other methods have been used it has taken weeks and even months to effect a cure, and I wish the profession to have a knowledge of this method which has been so efficient and satisfactory to me.—*Dominion Journal, April, 1901.*

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PORCELAIN INLAYS AND CROWNS. By Joseph Head, D.D.S., Philadelphia. Read before the Maryland State Dental Association, Nov. 10, 1900. By the public at large dentists are regarded solely as fillers of cavities and restorers of lost teeth. While these acts perfectly performed confer no small dignity, such titles now do not begin to cover the scope of modern dentistry, and it is most essential that the general public should be educated to an extent that will create an efficient cooperation between patient and

dentist, for without it the best results cannot be obtained. The dentist of to-day should not only restore lost tooth-structure, so that the restoration will be permanent, but he is under moral obligations to make the restoration artistic and of such a character as will conduce to the general hygiene of the mouth as a whole.

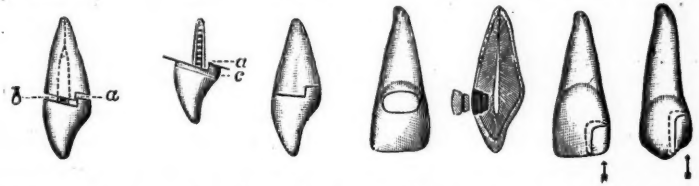
The baneful teachings of ten years ago that brushing of the gums and teeth was harmful is only one of the numerous errors that has to be removed from the minds of many patients. And the prejudice in favor of a so-called permanent filling, irrespective of appearances, is a species of barbarism in the light of our present dental knowledge that should be strenuously opposed. The modern teaching of cutting away large quantities of healthy tooth-structure in the front of the mouth so as to prevent possible future decay, and thus necessitating a large, unsightly display of gold, is a mistake almost as grievous as that made by Dr. Arthur twenty years ago. For if permanence and strengh is the sole aim, irrespective of appearances, an all-gold crown with a fine edge, so burnished as to avoid a shoulder, would accomplish that object much more effectively and with less pain to the patient; and a central incisor whose cutting-edge and approximal surfaces are conspicuously filled with gold is not less unsightly than an all-gold crown.

Every dentist knows that when he fills a tooth, the health and cleanliness of the mucous membrane around the tooth is as much to be considered as the tooth itself. Contour that will preserve from future decay is not more to be considered than contour that will preserve the delicate structures of the interdental space, for on the health of the gums depends the health of the root. Any procedure that tends to permanently break the union of the peridental membrane with the gum does perhaps a necessary harm, but if, in addition, the dentist places adjacent to that laceration an appliance that of necessity will prove a locus for putrefactive growth, that dentist compels the patient to endure such risk of injury to the general system that any compensating esthetic or masticatory advantage sinks into humiliating insignificance. As Dr. Kirk demonstrated last May at Albany, the etiology of pyorrhea alveolaris has been largely made out; filth deposits around the necks of the teeth are usually the prime agents in forming the pus-pockets.

The collar crown going under the gum cannot always be avoided. It in many instances does more good than harm, but we should

always bear in mind that any band placed on a tooth so that it will harbor germs will prove a possible seat for the beginning of pyorrhea. I wish to show this evening a bandless crown that seems to have the strength of the collar crown, with none of its disadvantages. It is, however, applicable only to solid roots that are capable of being given the proper dovetailed shape. Take, for instance, a central or lateral incisor, or a cuspid whose crown has broken down to within one-third or one quarter of the gum. Shape it, as in Fig. 1, *a*, with a notch on the palatal surface. The dotted lines show the outline of the enlarged root-canal. A Logan crown of the proper color should be ground and fitted so that there will be ample space between the root and the porcelain, as is shown in Fig. 1, *b*. The tooth is then removed and soft platinum foil, one one-thousandth of an inch in thickness, is burnished to fit the cut

FIG. 1. FIG. 2. FIG. 3. FIG. 4. FIG. 5. FIG. 6. FIG. 7.



surface of root. Over this platinum stiff plastic wax is placed and the crown is jammed upon it, driving and retaining the foil into all the interstices of the root's surface. After the wax (Fig. 2, *c*) is cool the platinum and crown can be removed, having the appearance of Fig. 2. A little investment can now be placed about the pin and under portion of platinum. When this is hard the whole may be dropped into boiling water, which will remove the wax, and the space thus left can be filled up with the proper colored porcelain and baked. The foil should be then pulled off, and if the work has been properly done the crown when cemented into place will be found to fit the surface of the roof perfectly, as in Fig. 3.

The advantage of this crown needs no explanation. The smoothness of contour affords no lodgment for putrefactive growth, recession does not reveal an unsightly metal ring, and the notch sustains the force of mastication almost as well as though a band were used. This method is not new, and my excuse for dwelling on it lies in the notch *a*, which obviates the danger of splitting the root that

usually confronts the dentist who uses the ordinary Logan crown. I am frequently asked, "Will porcelain fillings last?" and I invariably reply, "If they are well put in." But if any dentist takes up porcelain work for the purpose of having an easy time, I warn him to desist at once. He will find that he must take as much if not more pains than with his gold work.

Two classes of bodies are at present before the profession, low-fusing and high-fusing. The former can be melted in a gold matrix; the latter must be melted in a platinum matrix. Many attempt porcelain work and fail, but it has been my experience that ten times as many fail with the low-fusing as with the high-fusing bodies. In making a porcelain filling, success or failure depends largely on the preparation of the cavity. The edges should be absolutely smooth and sharp, with as few compound curves as possible, and the walls at right angles to any possible force of mastication. The bottom should be flat, and the sides so shaped that mastication will tend to drive the finished filling in, not out of position. When the cavity is thus prepared, soft platinum foil one one-thousandth of an inch in thickness, that is held immovably over it, should be coaxed into the cavity with spunk or bibulous paper as far as possible without danger of tearing, and when the edges have been sharply defined the platinum can be spun to the bottom with a ball burnisher. A platinum matrix made in this way has practically perfect adaptation. In cavities of the labial class, such as in Fig. 4, the depth should always be sufficient to insure good anchorage, the bottom flat, the walls on a slight bevel, and the undercut midway between bottom and enamel, as in cross-section in Fig. 5. There should be only one position for the porcelain filling under pressure, and that the correct one. The porcelain inlay cannot be undercut too carefully. In cavities of the corner class, such as are illustrated in Figs. 6 and 7, care should be taken to shape the cavity so that the walls at the cutting edge will be at least at right angles to the force of mastication. The adaptation of the filling should be so perfect as to constitute almost a dovetail. The dotted lines show the outline of the filling within the cavity. Any force applied in the direction of the arrow, at the extreme point, it will be noticed, would keep the filling still more firmly in position. With bicuspids and molars all frail walls should be cut away and good, smooth, sharp edges obtained, and the filling inserted as in Fig. 7.

Here it will be noted the force of mastication, as with the other fillings, still tends to keep it in position. This cannot be too strongly emphasized. The cement should fill up the crevices and sustain biting force where necessary, but dovetailing of porcelain should always second it in every way possible.—*Cosmos, March, 1901.*

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BLOCKS OF HARD PORCELAIN FOR FILLING TEETH. By Dr. R. Chauvin. Read before the International Dental Congress, at Paris, 1900. We have been filling teeth by means of fusible enamels since 1892. We demonstrated in 1893 the way of taking the impression of interstitial cavities of more or less regular forms. The difficulties experienced with the glass powders and the pseudo-porcelains which deteriorate so easily from contact with the fluids of the mouth were the cause of our researches to obtain inlays of hard porcelain, and even since 1894 we can already observe encouraging results. Let us state here that our porcelain is superior to that used in making mineral teeth, from the standpoint of resistance to the influence of the oral fluids.

The great obstacle to the use of true porcelain lies in the difficulty of obtaining a sufficiently high temperature at which to fuse it. The degrees of resistance of enamels used in dentistry vary from the soft glass to the hardest argillaceous pastes, but containing always in their composition silicates of fusible bases. To-day with the means at our disposal it is not possible to fuse a powder of kaolin or feldspar if it does not contain fusible bases, such as silicates of potassium and sodium. In certain powders we discovered the presence of lead through the black coloration which appeared in the inlays after they had been in the mouth only a short time. These powders, which are easily recognized after they are fused, give a dense enamel, polished and of good appearance. We believe that they were prepared with *débris* of the glass used for optical purposes (the flint glass and crown glass used for the manufacture of optical appliances contains a great quantity of lead salts) that had been colored by adding pieces of glass bottles such as are used to keep substances from the influence of light.

In formulæ the constituents of which are silica, sodium and calcium, or silica, potassium and calcium, the sodium and potassium enter in the proportion of 12 to 15 per cent. The kaolin of Saint-Yrieix, which enters into this combination, contains only slight

traces of sodium. It is evident that better formulæ could be combined. It should be remarked that none of the enamels in use to-day gives perfect results. In order to obtain a relatively easy fusibility, a condition indispensable on account of the appliances that we have to-day, fusible bases which are disintegrated by the fluids of mouth have to be used in the making of enamels.

All those who use porcelain know the difficulties of getting the right shade. When the cavities are labial or buccal the right color can be obtained and it is hard to distinguish the inlay. The same is not the case when the cavities are interstitial. Here the shadow produced by the neighboring tooth on the inlay makes the line of junction of porcelain and tooth very conspicuous, and the filling appears darker than tooth. In order to diminish this inherent defect in all porcelain inlays a shade a great deal lighter than the tooth should be selected. The cement should also be of a lighter shade. It is better to use a thick inlay wherever possible. All these details are too well known to insist any longer upon their importance. With a little experience very satisfactory results are obtained, in spite of all difficulties.

The methods of fusing the porcelain whose formula approaches as much as possible that of pure kaolin are not numerous. The White teeth can be fused only in high-heat furnaces. The old practitioners probably remember that the Belgian teeth were a great deal less hard then the White teeth. They had to be fused in high furnaces that had to be lighted the day previous. We have tried to fuse our powder in an earthen furnace heated by gas, and the combustion was intensified by compressed air; yet notwithstanding the intense heat, we could not carry the fusion even to the biscuit state—nevertheless we know that it is only by the aid of oxygen that we are enabled to fuse the hard porcelain. Very distinct differences, however, must be recognized as to the way in which the oxygen or the compressed air is used for increasing the heat of the furnace. In our method of procedure we direct the oxyhydrogen flame upon the piece to be fused; it is the only way to obtain a sure result.

The following are the substances which enter into the composition of kaolin and of our powder: *Kaolin*—Silica, alumina, sodium, magnesium, water. *Our Formula for the Powder*—Silica, alumina, iron, calcium, magnesium.

Fusion of the Porcelain by Means of Oxygen Appliances. Technique. The appliances necessary for the making of porcelain inlays are: 1. An oxygen reservoir 2. A blow-pipe. The reservoir that we have devised is composed of a cylinder of cast iron, similar to the one used in general therapeutics for keeping oxygen under pressure; a differential valve whose principle consists of a marker made of ebony, which is turned by a differential and retarded movement in such a way that one turn corresponds to an elevation or depression of the marker of half a millimeter. The result is that the effort necessary in order to open the valve is very trifling. Dr. Chauvin went on to describe his reservoir, pointing out its advantages. He then described his blow-pipe, which is composed of a cylindrical tube mounted on a tripod. At the lower third is a hemispherical cupola to which a system of double valves is attached. These two valves consist of one for the oxygen and one for the gas. The essayist gave a lengthy description of his blow-pipe, and spoke further of the advantages to be derived from the use of his improved appliance.

As already said, the temperature at which the porcelain fuses necessitates the use of platinum in the matrix or impression of the cavity. The taking of this impression requires some manual skill. It is harder to take the impression with platinum than with gold, but with a little experience as perfect an impression can be obtained. Platinum is a good material for these matrices; the results are very satisfactory.

In order to take a perfect impression it is indispensable in cavities that are wider at the bottom than at the orifice to give by means of cement such a shape to the cavity that no undercuts will be present. When the cavity is an approximal one the teeth should be sufficiently separated, in order that the impression may come out without being warped.

The piece of platinum foil for the reproduction of the cavity should be of sufficient length to cover the lingual and labial surfaces of the tooth. When the platinum has been introduced into the cavity gradually, always trying not to tear the foil, it is a good thing to press strongly against the margins of the cavity, holding the matrix by the portions covering the lingual and labial sides. When everything is in position the borders of the cavity should be marked by means of an instrument of metal or agate. If the foil

does not move in the cavity it can be considered that the impression is a good one. We have said that the tearing of the foil is to be avoided, but this condition is not an absolute one. Often our matrices have been pierced through, yet the inlays did not suffer any change.

The matrix should be prepared in such a way that the platinum should not fuse when in contact with the oxyhydrogen flame. This is done by covering all the platinum, except the part which represents the cavity, with a paste of calcium carbonate and water. It is then dried gradually over the gas flame. The matrix prepared in this way is ready to receive the porcelain paste. The paste, when introduced into the cavity, must be of a thick consistence. It should fill the concavity completely, for we must take into account the contraction of the material. By proceeding in this way the inlay may require only two burnings, but as a general rule three are necessary. There is no advantage in getting only to the biscuit point in the first burning; it is better to burn the porcelain completely, so as to avoid at once the further contraction of the material fused. The burning is done directly in the flame. The operation is performed as follows: First. The paste is dried thoroughly and gradually by passing over the flame and withdrawing it in order to allow the vapors of water to escape. When it is well dried there is no danger that it will leave the matrix, and a higher heat can then be applied. Second. The oxygen should be let on progressively by turning the regulating handle. When the paste has undergone a high temperature, and when there is no more risk of cracking, put the porcelain in direct contact with the flame. Third. If the operation has succeeded the porcelain contracts toward the center. More paste is then added to fill up the spaces between the burned porcelain and the margins. To be sure of the penetration of the porcelain into the most minute fissures, it should be introduced in the more liquid state, and then thicker paste can be added. The inlay is then burned for the second time.

Note that every time that the inlay is burned (after the first burning) its surface should be covered by a slight layer of wet powder. If this precaution is not taken the intense heat developed by the oxygen fractures the inlay in the center. This accident does not often occur with small inlays, but commonly with large ones. But even if the fracture takes place the inlay can be repaired.

Were we to cover all the surface of inlay with porcelain and burn it immediately after, the result would be a failure, for the fracture would be visible. The repair should be made in the following way: The inlay should be finished completely without paying any attention to the fracture. With a very fine grinding wheel the fissure is made as deep as possible, and is filled with a thick paste. The surface of the inlay should also be covered with a thin layer of porcelain and submitted to a new burning.

We will emphasize again the necessity of painting the platinum matrix with the calcareous paste, which is used to prevent the platinum from fusing; without this precaution the metal would not resist the heat developed by the oxygen. It is very important that the porcelain should be fused exclusively by means of the oxygen portion of the flame. During several months we had many failures from the mixing up of the two flames.

Without desiring to talk of the details of the operation of inserting inlays, we will say that, while the majority of authors who have treated this question, as also many practitioners, neglect the mechanical means for retention and depend entirely on the adhesiveness of the cement, we make regular undercuts in the substance of the inlay.

The author, in conclusion, called attention to the following points: 1. The hardness and resistance of the inlay. 2. The simplicity of the technique and the rapidity with which the inlays are made. 3. The small amount of heat caused by the burning—the use of the oxygen only lasting the time required to pass the porcelain over the flame for a few seconds. 4. The inexpensiveness of the appliances. The installation is so simple that the porcelain work can be made easily in the office.—*Cosmos, March, 1901.*

* * *

REMOVAL OF THE SUPERIOR MAXILLA THROUGH THE MOUTH. By A. H. Ferguson, M.D., C.M., Chicago. Various methods have been adopted by eminent surgeons for excision of the superior maxilla, but we found these unsatisfactory in many particulars, especially from a cosmetic point of view. The extensive incisions made by past operators often resulted in ugly scars on the face, as well as otherwise doing permanent injury to the patient. This led us to consider whether a better way could not be attained by which all the evils mentioned above could be

obviated. In our experiments it was soon made clear that the facial incisions of the old methods were not essential to a thorough, efficient and speedy removal of the upper jaw. We therefore practically discarded them all and devised a method which we have fairly tested in recent operations very successfully, both in partial and complete excisions.

Operation. Preliminary.—Place the patient on an operating table in a horizontal position, with the head resting on a movable head-piece which can be raised and lowered at will. Administer chloroform. Tie the external carotid artery on the side to be operated upon. Sit on a chair at the head of the patient. Turn the head downwards in the Rose position. Insert a mouth-gag between the molar teeth on the opposite side. Disinfect the face, mouth, nose and pharynx with equal parts of alcohol and water, taking care not to get the disinfectant into the eyes or larynx. Give a third of a grain of morphia and 1-30 of a grain of strychnia hypodermically. Have in readiness a tracheotomy tube and transfusion apparatus. The operative procedure on the jaw may be divided as follows:

Stage 1. Division of the Bony Attachments.—Pass a small knife through the skin over the nasal process down to the bone at the point where it is desired to be severed. Then cut downwards and outwards to the distance of about one-half inch; while still holding the knife on the bone, pass an osteotome along its side to the bone, withdraw the knife and turn the osteotome transversely on the nasal process and with a few blows of the hammer drive it through into the nasal cavity; this space having been previously packed with iodoform gauze. A scalpel is then thrust through the skin at the lower and inner border of the malar attachment of the superior maxilla, opposite the center of the malar bone, and a cut about one-half inch is made downwards and inwards. An osteotome is passed along the knife to the bone and turned transversely to the cut, aiming at the articulation between the two bones. The osteotome is now driven backward and slightly outward, almost in a horizontal manner, until the spheno-maxillary fissure is entered, thus completely severing the superior maxilla from the malar bone. It is important to preserve that portion of the malar bone which forms the lower border of the orbit. A narrow strip of gauze is packed into the wound. The mouth is then opened wide and a

central incisor is extracted from the diseased upper jaw. With the osteotome and hammer cut through the alveolus and hard palate between the nose and mouth, as near the center as possible, passing through the socket of the tooth removed, and having iodoform gauze packed firmly into the wound, thus preventing the escape of blood into the mouth and throat. The posterior bony attachments break easily when the bone is being extracted. The pterygoid processes break close to their origin from the sphenoid, and the ethmoid separates along the inner orbital margin.

Stage 2. Dilatation of the Mouth and Intra-Oral Separation of the Soft Structures from the Bone.—With one thumb in each angle of the mouth and fingers grasping the lower jaw, forcibly dilate the mouth. If a little time and care is taken to accomplish this act it is astonishing the amount of room obtained without cracking the lips. Raise the upper lip upwards and outwards with a strong sharp retractor. Insert a strong resection knife through the mucous membrane at the junction of the lip and superior maxilla, and cut through it and subjacent structures the full width of the bone from without inwards, separating the cartilage of the ala. Rapidly sever the soft structures of the whole anterior surface of the cheek, upward to the infraorbital ridge; up and in to the incision in the nasal process; and then upward and outward to that between the malar process and the bone of that name. Pack the wound firmly with gauze and wait two or three minutes, and if this is cleverly done there will be practically no hemorrhage.

Stage 3. Removal of the Bone and Tumor.—Remove the gauze from all the wounds, retract the lip and soft structures of the cheek up and over the eye; seize the upper jaw with Ferguson's lion-pawed forceps, and aided by a strong raspatory the bone is thoroughly loosened. Now if the soft palate is free from disease, separate it from the hard by a transverse incision. With the lion forceps already in place, force and twist the upper jaw out of its bed, cutting with heavy scissors or knife all soft structures interfering with its rapid extraction. The periosteum of the orbital plate is preserved if possible, and the hamular process is removed with care. At this stage the first hemorrhage of any importance is liable to occur from branches of the internal maxillary artery—especially the posterior palatin and infraorbital, and in anticipation of it, just as soon as the bone is cleared away gauze is rapidly

and firmly packed in its place. Inasmuch as the external carotid had already been tied, the bleeding is mainly venous in character and it is thoroughly checked by pressing and keeping the packing *in situ* fully five minutes. Time is really saved by being patient at this stage of the operation. Now remove the gauze. Any bleeding point is caught with forceps and the vessel twisted or ligated. Search for outlying portions of the tumor; if any are found remove them and cauterize the suspicious-looking places with a solution of chlorid of zinc (40 gr. to 1 oz.) or actual cautery. Iodoform gauze is carefully forced into every crevice of the large cavity; one long strip, two inches wide, is used for the first half of the packing. The outer half is very thoroughly impregnated with iodoform, so as to keep the inner packing as aseptic as possible. The two small incisions made in the skin are sutured with a horsehair stitch in each, and the operation is completed.

The operation may, of necessity, according to the extent of the disease, be more or less destructive than the one just described. The sacrifice of part or whole of the malar bone is often called for. I have had occasion to remove the eyeball, the lower half of the bony wall of the orbit, and half the nose, but I have not extirpated both maxillæ. When the disease involves structures other than the upper jaw, or when the tumor is large, then the *extra-oral—the open free incision method*—should be adopted. On the other hand, all cases demanding only excision—partial or complete of the upper jaw itself—should be done through the mouth. Indeed, the disease can be followed in some cases far beyond the confines of the jaw and removed through the oral cavity by means of rongeur forceps. It is often impossible to tell to what extent the surrounding structures are invaded by the neoplasm until the operation is nearly finished. Then, of course, if one is operating intraorally he dislikes to make external incision if he can do efficient work without them.

After-treatment. This is of vast importance, and begins before the patient is removed from the operating table. It is good treatment to administer subcutaneously in all cases at all weakened two or three pints of saline solution, at a temperature of not less than 110 deg. F., nor more than 115 deg. The transfusion counteracts shock, stimulates the kidneys to perform their function, and often obviates the nausea and vomiting dependent upon the anesthetic.

If shock is marked additional treatment is carried out. A special nurse is detailed on the case, who is instructed to cleanse the mouth by swabbing with a feeble antiseptic solution every hour and oftener if necessary. The mouth should not be irrigated, as recommended by some surgeons, on account of liquid saturating and prematurely loosening the gauze in the wound and thus carrying infection to it. If the patient is feeble he is not to be raised from the horizontal position, but should lie on the opposite side to the operation, with the angle of mouth most dependent and a piece of plain gauze protruding from his mouth.

The feeding of the patient should be carried out with great care. If a tube can be passed into the stomach without causing much disturbance it greatly facilitates nourishment. Feeding by the rectum for the first twenty-four or forty-eight hours is usually necessary, and for the support of the patient a subcutaneous transfusion of a saline solution may be repeated several times.

The dressing should not be changed for forty-eight hours, unless some special reason for so doing presents itself, and when it is changed only the outer packing is removed and a similar one carefully put in its place, with due regard to all aseptic and antiseptic precautions, and this is repeated every other day at least. The inner dressing, which had been firmly packed into every crevice of the wound, should not be removed for several days, not until a plastic granulating wall is formed, thus lessening the dangers of various forms of sepsis. After the inner dressing is changed, then replace it every twenty-four hours. As the cavity closes a time comes when it is dispensed with altogether and patient keeps his mouth cleansed with antiseptic solutions.

If the eye has a tendency to recede, or the lower lid to become displaced downwards, early prosthesis is to be recommended. At the end of a week the two horsehair stitches should be removed from the skin punctures.—*Western Med. Review, April, 1901.*

* * *

TRIGEMINAL NEURALGIA. Hughes protests against too much surgical treatment of trigeminal neuralgia, and in forty years' practice in cases that he has had the chance to steadily treat he has yet to see the first go to the surgeon. His chief reliance in neuralgia, especially sciatica and facial, has been on belladonna or atropin, strychnin, large doses of quinin and more recently hypo-

quinidol, which is a phosphate of quinin. He has also supplemented this with persistent galvanization of the affected nerve tracts and some form of bromid, the hypophosphites of iron, and gelsemium in green root tincture for direct anodyne effect. He uses locally ether, menthol, heat and electricity. In many cases also he has used Fowler's solution and coal-tar anodynes. In neuralgia there is a peculiar state of special aptitude to pain in the nervous system; there is weakness and proneness to become affected by cold, etc., that would in other cases be harmless. He draws the line on uterine diseases as the direct cause, not attributing neuralgia to them. As regards surgical operations he is conservative. He thinks that the complete removal of the Gasserian ganglion should be undertaken only as a last resort. He objects to this procedure: 1. Because of the curability of the disease by medication if rightly employed, in many cases where sufficient vital stamina remains, such as would withstand the ordeal of ganglion extirpation. 2. Because trifacial neuralgia is not a disease exclusively of the ganglion. 3. Because it appears to be a disease not confined to the fifth nerve or the beginning at the Gasserian ganglion. It is a morbid state of the sensory nervous system with characteristic trigeminal manifestations and not exclusively a local disease. 4. Because as good an effect can be obtained by rest and recuperation. 5. Because of the trophic irritative or paralytic sequelæ in the cornea and face, the herpes, ear and jaw involvement, ptosis and fourth and sixth nerve paralysis and, finally, the mortality of operation in some cases. The infection which follows the perforation of the antrum and the shattered health of many surviving also seem to forbid it. The fact that power of tension of the tympanum comes from the fifth nerve and otic ganglia is not considered as it should be by surgeons. His suggestion for a neurosurgical plan of successful treatment of trifacial neuralgia when neurotherapy fails would therefore be this: Mentally prepare the patient for its radical relief by securing hopeful consent to a combined surgical and neurologic treatment. Put in bed, give chloroform, extirpate the involved peripheral nerves if you wish, keep both eyes closed—not necessarily by stitching—for the same length of time as one is kept closed by stitching to prevent the eye sloughing, so likely to follow Gasserian ganglion extirpation without it. Keep the eyes closed to secure brain and nerve center rest. Keep visitors away from the

patient, maintain absolute brain and neural quiescence, such as follows the operation, by appropriate medication, and maintain at least a six to ten weeks' treatment on the lines above indicated. With this plan put in faithful practice he thinks Gasserian gangliotomy would take its place among the lost arts.—*Jour. A. M. A.*

* * *

REGULATING CASE. By Dr. John E. Heyke, New Haven, Conn. May 21, 1900, a girl ten years of age came to my office to have one of her central incisors regulated. The history of the case was as follows: At four years of age the girl fell off the porch, her mouth striking some object on the ground, forcing the left central up between the alveolar plates, entirely changing the position of the permanent incisor then being developed. When the permanent tooth erupted it was found to have a horizontal position, making its appearance immediately under the floor of the nose and entering the lip just above the labial fold, not being visible at any point. Gradually it had worked its way towards the outside of the lip, and at the time mentioned nothing more than the cuticle covered it on the outside.

The impression of the mouth was taken and an appliance, consisting of gold caps and a bar crossing the space of the left central, was made and cemented in place. The tooth was then liberated from the tissues of the lip, and all the soft tissues underlying the tooth were divided. About three weeks after the appliance was put on the right central and the two laterals became very tender, and the misplaced member very loose, so an absolute rest of two weeks was given. This occurred at three different times during the regulating period. January 8, 1901, the tooth was in its proper place, having been turned from a horizontal to a vertical position and moved down considerably over half an inch. The tooth is dead, not, however, from the process of regulating. The appliance used consisted of the before-mentioned gold caps and rubber bands.—*International, April, 1901.*

ANOMALY IN THE FRONTAL SINUSES. Suarez de Mendoza.—In the case of a patient operated on for double frontal sinusitis, the inflammation recurred and two supplementary sinuses were found, separated by a thin partition from the true sinuses, but each with its separate passage into the nose. Mendoza has found a similar anomaly on two cadavers. Anger has mentioned this anomaly and Beco has recently reported a similar case.—*Progres. Med.*

Letters.

BALTIMORE LETTER.

BALTIMORE, May 6, 1901.

Dear Digest:

The winter with its multiplied activities has been too much for your correspondent, and many things that might be regarded as indulgences, such as his letters to you, have been out of the question. Now the spring with all the flowering trees and shrubs, the laughing, bubbling fullness of life invites him away from the dreary monotony of work into God's out-of-doors. It is too much to wish that every dentist who has felt the burden of the winter's work might now drink deep and full of the inspiration of such a spring as this is here. Where is the fountain of all this wonderful manifestation of life and beauty? Is there anything in us akin to this? Do we not need to bask in the soft, early sunshine to renew our hope and interest by a genuine communion with the marvelous sweep of awakening life?

For my part, I wouldn't have traded my yesterday in which I tethered the colt in the clover, lifted up the head of some modest and blushing wild flower, and said "How d'ye do" to a little baby fruit tree, covered all over with the glory and fragrance of its first bloom, for any indoor feast of the mind or palate. My ear was regaled with the music of the robin, the bluebird and the wren; my heart full of love, my mind aflame with admiration. Come out into the country and let Oriole show it to you. You'll like it; even the mint is up.

But, you ask, what place has this in a dental journal. I answer, it is one of the constituents of good dentistry; leave it out and the thing will get stale, flat and unprofitable. When John B. Gough was asked what was the saddest picture he had ever seen he said, "An old face on the shoulders of a boy." Have we not in our ranks men whose pinched and weazened countenances evidence a useless and shortsighted enslavement? Does any largeness, any hope, come out of such a useless sacrifice? A piece or two of filthy lucre which may serve to ornament a coffin or start a family feud when we are gone to meet our account, is all it promises. Ah!

you say, Oriole has turned preacher! Well, what if he has; he has always contended for the right to preach.

I wish I could tell you about our meeting, sixteenth, seventeenth and eighteenth of this month. We have visitors coming from everywhere, including a *Good* thing from Chicago. Why don't you come? The exhibitors have not been slow to write for space. The preliminary program shows enough material for a National meet. Saturday at 12:30 we will take a boat for Annapolis, our quaint old capital, which in itself has much to interest the visitor. A game of ball between West Point and the Naval cadets will entertain many. We will have something good and seasonable to eat, some music and fun, a good company of companionable fellows and a gay time. Now won't you go with us? We are awfully sorry that your meeting comes off about the same time. Dates have a way of conflicting. I am sure some of the clinics will be novel and instructive, and I mean to give you a report for next month, so you will excuse me from saying more now.

Our State Board will be in session to-morrow, and the fledgelings will have a chance to show what they can do. We wish they would not require so much theory but a little more practice. The use of the different forms of gold should be demonstrated, a crown and plate made, etc. By the way, that Army Examining Board is a corker; the members must be studying examination as a fine art. A bright little boy from the West stopped in to see Oriole not long since. He said he was on his way to Manila, so at least three have passed. Certainly it will be creditable to dentistry if the men who go in the army to practice our specialty compare favorably in skill and culture with the medical men; though what such men want with the place we can't see. Possibly the love of adventure may have some influence. We will have something to say next month.

Cordially, ORIOLE.

CAUSES OF BAD BREATH.—A. W. Ringer (*Med. World*) cites the case of an old lady suffering from fetid breath who was cured by the removal of a large elongated square of offensive matter from one of the nasal passages, the lady being subject to atrophic catarrh. Other causes given are decayed teeth, disease of the lungs and diabetes. The most common cause, he thinks, is putrefaction within the duodenum. Another writer in the same journal has found the condition due to a caseous condition of the post-tonsillar crypts. These folds should be expanded and examined carefully with an ear spoon or dull probe.

The Dental Digest.

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Where All Communications Should be Addressed.

Editorial.

POSTPONEMENT OF CROWN COMPANY'S SUITS.

We had expected that the suits brought by the International Tooth Crown Company against members of the Dental Protective Association would have come to trial ere this. They were originally set for the March term of court, but as they are to be tried by a jury, and as the docket was full of important cases, the court has postponed these suits until next October. At that time some or all of the suits already begun in New York State will be tried, as this seems to be the only territory in which the Crown Company are willing to test the validity of their claims. This delay is if anything beneficial to the Protective Association. Meanwhile the members need not be greatly alarmed over the Crown Company's bringing additional suits, as they have not found such procedure overly profitable during the past year and a half.

CAUSES FOR FAILURE OF AMALGAM FILLINGS.

Last month we published an article by Dr. E. K. Wedelstaedt with this title. We now refer to it for the purpose of emphasizing every point made by the writer and of bringing up one or two which were not touched upon. Dr. Wedelstaedt stated that he believed in quick-setting amalgams, but he did not tell why, and we do not think it is generally understood why those which set the quickest are the safest. The most important reason is that because in packing the mass it does not shift under pressure nearly so readily as a slow-setting, easy-working alloy. This is easily demonstrated in filling test tubes, and the difficulty of making perfect margins is so great that not one operator in ten can fill one of these simple cavities, out of the mouth, without having bad places at some marginal points. This is largely due to the fact that pressure on one side of the mass draws it away from the other. This obtains to a certain extent with a quick-setting amalgam, but one which sets

slowly will be almost shifted out of the tube. Since this is true in filling a steel tube, with how much greater force does it apply to cavities in the mouth, usually difficult of access, and where the operator cannot see the real condition when finished.

This brings up the question of the matrix, and except where the cavity has four walls we do not believe a perfect filling can be made with amalgam unless a matrix be employed. We generally place a thin copper strip around the tooth, fastening it with quick-setting cement, perhaps employing also a little pine wedge. In this way the matrix can be placed and held just where needed, and as the cement sets in two or three minutes the work need not be delayed. Perhaps more failures result from not using a matrix than from any other one cause, for while some of the others reasons are dependent upon the quality of the material used, even the best alloy may fail because not properly adapted to the walls and marginal cavities.

We believe it is just as difficult and requires fully as much skill to make a good filling with amalgam as with gold, yet the majority of operators do not take one-half the care necessary. This is probably due more to ignorance than to carelessness, but it seems a pity that greater pains are not taken with amalgam fillings, since the material is used so much and can be made so important an adjunct to our practice.

STERILIZATION OF INSTRUMENTS IMPERATIVE.

The *Medical Mirror* recently contained an editorial entitled "Inspection of Dental Establishments," in which the editor said: "The numerous reports we are receiving from time to time regarding serious results from blood poisoning following dental work suggest the importance of city health departments inspecting the various dental offices with a view to determining that the equipment includes proper provision for sterilizing dental instruments. Many of these establishments are conducted more upon commercial lines than on a scientific basis."

Dr. W. L. Baum of Chicago in the *Journal of the American Medical Association* recently reported five cases of syphilis due to infection by means of dental instruments, as follows: The first case was that of a dentist aged 28, who presented himself suffering with a papular eruption and a general indolent adenitis. He denied venereal affection, and was unable to connect his present trouble with

any antecedent sore except a small, stubborn ulcer on the right index finger, where he had accidentally scratched himself with an instrument while filling some teeth for a patient. The second case was that of a bookkeeper, whose primary sore occurred at the site of an injury to his tongue by a dental tool. The third was a young man of 22, who came with a papillary syphilide. He had cervical adenitis and a sore upon the mucous surface of the lower lip, where he had sustained a slight injury from a dental instrument. The fourth was a woman of 35, married to a healthy man, who had typical symptoms of syphilis, beginning with a sore upon the tongue, due to a wound by a dental instrument. The fifth was an express driver, aged 47, whose primary sore was caused by a wound of the mucous surface of the upper lip caused by a dental tool.

Last month, page 294, we reported a paper read before the Chicago Dental Society by Dr. L. Blake Baldwin, who showed how syphilis was often transmitted by infected instruments, and both he and those who took part in the discussion urged the importance of more care in this regard.

From time to time we have published newspaper reports of cases where dirty instruments caused disease and even death, and have also cited many instances where damage suits were brought against dentists and judgments rendered because proper care was not taken to protect patients against infection.

Action has been considered in some cities and taken in others to make barbers disinfect their razors, towels, etc. It is hardly probable that the health department of any city will ever inspect dental offices, as is suggested by the editor of the *Medical Mirror*, but if this carelessness is to be continued it will greatly lower the standing of the dental profession in the eyes of the community, even if it does not actually bring about legislation. All of this is looking at the question from simply a utilitarian standpoint, but considering it not only from selfish but for humanitarian reasons, dentists cannot be too careful in guarding against all possible infection.

Notices.

CONNECTICUT ODONTOLOGICAL SOCIETY.

This society was organized Feb. 12, 1901, and at a subsequent meeting on March 12 the following officers were elected: Pres., W. H. Pomeroy; V. P., S. L. G. Crane; Sec., C. L. Howgate; Treas., M. C. Hitchcock.

COLORADO STATE DENTAL ASSOCIATION.

The fifteenth annual meeting of the Colorado State Dental Association will be held in Denver, July 9–11, 1901. H. F. HOFFMAN, Sec'y, Denver.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The nineteenth annual session of this association will be held at the Plankinton Hotel, Milwaukee, Friday, Aug. 2, 1901, at 10 a. m., and will continue during the following Saturday and Monday.

C. A. MEEKER, Sec'y, Newark, N. J.

SOUTH DAKOTA BOARD OF DENTAL EXAMINERS.

The next meeting of this board will be held at Vermillion, S. Dak., July 1, 1901. Applicants for examination should bring operating tools and all material necessary for filling with gold, etc., and for such other work as the board may require. G. W. COLLINS, Sec'y, Vermillion.

MISSOURI STATE DENTAL ASSOCIATION.

This association will hold its thirty-seventh annual meeting at Sedalia, July 9–12, 1901. All reputable dentists are cordially invited to be present and to participate in the proceedings. A fine program has been arranged, and the best meeting in the history of the society is expected.

B. L. THORP, Cor. Sec'y, St. Louis.

NATIONAL ASSOCIATION OF DENTAL FACULTIES.

The next meeting of this organization will be held at Milwaukee, Friday morning, Aug. 2, 1901, at 10.30 a. m. The executive committee will meet in session Aug. 1, at 2 p. m. According to rule, all colleges shall be expected to have a copy of the annual announcement for the coming session in the hands of the executive committee at that time.

S. W. FOSTER, Sec'y Ex. Com., Atlanta, Ga.

COLORADO STATE BOARD OF DENTAL EXAMINERS.

This board will meet in Denver June 3, 1901, at 10 a. m., to examine applicants for license. In addition to the usual oral and written examination, candidates must supply their own patients, and come prepared with all necessary instruments, rubber-dam and gold, to perform practical operations under the supervision of the board, which will pass on the cavities selected and the work done.

H. F. HOFFMAN, Sec'y, California Bldg., Denver.

MASSACHUSETTS DENTAL SOCIETY.

The thirty-seventh annual meeting of this society will be held in Walker Bldg., Massachusetts Institute Technology, Boylston St., Boston, June 5 and 6, 1901. The meeting is to be given up to essays and clinics by prominent men of the profession. A banquet will be held the first evening, at which time "Dental Education" will be discussed by noted educators. Please mark

off the above dates, and be present at all sessions, for your own personal good and the success of the society.

EDGAR O. KINSMAN, Sec'y, Cambridge.

NEW ENGLAND ASSOCIATION OF DENTAL EXAMINERS.

The fifth annual meeting and dinner of this organization was held April 4, 1901, at Boston. All the New England boards were well represented, and there was an animated discussion of the work of the state boards and their mutual relations. Dr. Eugene H. Smith, dean of the dental department of Harvard University, and Dr. Harold Williams, dean of Tufts University Dental School, were present as guests. The object of the organization is to provide a standard examination for all the New England States, so that a dentist having passed an examination in one can, under suitable restrictions, practice in any of the others. The officers elected are: Pres., T. J. Barrett, Worcester, Mass.; V. P., D. W. Fellows, Portland, Me.; Recorder, Geo. L. Parmele, Hartford, Conn.; Chairman Ex. Com., John F. Dowsley.

NEW JERSEY STATE DENTAL SOCIETY.

The thirty-first annual session of this society will be held in the Auditorium at Asbury Park, July 17-19, 1901. The Columbia Hotel will be headquarters; rates, $2.50 and $3.00 per day. To the busy practitioner who desires to witness the latest and best efforts in clinical dentistry we would say "come," as there will be fifty clinics. There will be five papers read on the best and latest efforts in the science of dentistry. We shall have also a veritable museum of the most perfect electrical appliances, mechanical tools, chairs, instruments, and accessories of the modern dental office, and you will see not only the contents of one dental depot, but of all the best in the country. The city dentist as well as the one from the cross-roads can see and learn something. Mark off the dates now, and come to see us.

CHAS. A. MEEKER, Sec'y, Newark, N. J.

MASSACHUSETTS BOARD OF REGISTRATION IN DENTISTRY.

A meeting for the examination of candidates will be held in Boston, June 19-21, 1901 Candidates who have applied for examination will report to the secretary June 19, at 9:30 a. m., at Harvard Dental School Infirmary, North Grove Street, and come prepared with rubber-dam, gold and instruments, to demonstrate skill in Operative Dentistry. Any one who wishes may bring his patient. So far as possible patients will be furnished. The board in every instance selects the cavity to be filled.

The theoretic examination—written—will include operative and prosthetic dentistry, crown and bridgework, orthodontia, anatomy, histology, surgery, pathology, materia medica, therapeutics, physiology, bacteriology, anesthesia, chemistry and metallurgy, and will be held at Civil Service Rooms, State House, from June 20, at 9:30 a. m., until June 21, p. m.

All applications, together with the fee of twenty dollars, must be filed with the secretary of the board on or before June 12, as no application for this

meeting will be received after that date. Application blanks may be obtained from the secretary. Candidates who have taken an examination and failed, who desire to come before the board again at this meeting are not required to fill out a second application blank, but must notify the secretary as above in order to be registered. The fee for third and subsequent examinations is $5.00.

G. E. MITCHELL, Sec'y, 25 Merrimack Street, Haverhill, Mass.

NATIONAL DENTAL ASSOCIATION, SOUTHERN BRANCH.

The fourth annual meeting of the southern branch of the National Dental Association will convene July 29, 1901, at Nashville, Tenn.

C. L. ALEXANDER, Cor. Sec'y.

O! MI! DENTAL MEETING.

The third triennial meeting of the state associations of Ohio, Michigan and Indiana, known as the original Tri-State Dental Meeting, will be held at the German House, corner Michigan and New Jersey streets, Indianapolis, June 4–6, 1901. All dentists who conduct their practices in a manner to command the respect of their fellow practitioners are invited to attend and participate in the proceedings, whether they are members of a state association or not. These meetings are the largest and most interesting held in the United States. Fully eight hundred dentists will be present. The program includes some sixty clinics of great interest and importance. Railroad rates of a fare and a third for the round trip have been granted by the Central Traffic Association throughout the whole territory. For further information address,

GEO. E. HUNT,
Chairman, 131 E. Ohio St., Indianapolis.

THEODORE FRANCIS CHUPEIN.

We deeply regret to announce the death on March 23, 1901, of Dr. T. F. Chupein. He was born in Charleston, S. C., on the 7th day of September, 1830, where he received his education and lived until 1876. At the age of 17 years, he was placed by his father with Dr. Wm. S. Monefelt for the study of dentistry. Remaining with his tutor from 1847 to 1852, he was principally engaged in the laboratory, doing all the artificial work of his preceptor. In 1852 he commenced practice for himself, but his father dying the year after, his practice was interrupted for two years.

With Dr. J. B. Patrick and W. S. Brown of Charleston, and Dr. Wm. Reynolds of Columbia, S. C., Dr. Chupein was an active spirit in the formation of the South Carolina State Dental Association, and was its first secretary and afterwards its president. He was almost wholly instrumental in the establishment of the "Charleston Dental Association," being a leader in this organization and giving all his efforts to its advancement.

He devoted all his time with little intermission to his profession, with the exception of the duration of the war, when he served in the army of the Southern Confederacy. Even then he practiced dentistry, for being for a

year or more doing garrison duty, he brought his case of instruments to camp and filled teeth for the officers and men who applied to him for this service. He has told us that at this time being out of gold foil he purchased an ounce from Messrs. Brown & Hape of Atlanta, Georgia, and paid them *fifteen hundred dollars* for it.

At the close of the war he came to Philadelphia and obtained employment with Dr. J. D. White, with whom he remained until 1866, when he returned to Charleston, and recommenced the practice of dentistry. In 1872 he came north and graduated as "Doctor of Dental Surgery" from the Pennsylvania College of Dental Surgery, after which he again returned to Charleston.

In the latter part of 1875 a disastrous fire so crippled him by the destruction of his office, instruments, library and a dental depot which he had established, that early in the following year he moved with his family to Philadelphia, and opened his office at 1408 Pine street. Shortly after his arrival he became a member of the Pennsylvania Association of Dental Surgeons, and in 1877 he was elected its secretary, which office he has held continuously since. He also connected himself with his old Alma Mater, the Pennsylvania College of Dental Surgery, and occupied the position of one of its clinical instructors. He was a member of the Odontographic Society, the Odontological Society of Pennsylvania, and was made an honorary member of the Academy of Stomatology. For some years he undertook the section of the Practical Place in the old series of *The Dental Office and Laboratory*, and in 1887 he assumed the editorial department of the New Series of the journal, which he filled up to the time of his death. He was also a contributor to the *American System of Dentistry*, edited by Prof. W. F. Litch.

He took an active part in the celebration of what is termed The Golden Anniversary of the Pennsylvania Association of Dental Surgeons, which was the commemoration of the fiftieth anniversary of the organization of that society and the inception of dental education in Pennsylvania; an event which was celebrated on the 16th of December, 1895, by a banquet at the Continental Hotel.

He was married, 1858, to Virginia M. Pohl of Philadelphia, and had six children. His widow and three children survive him.

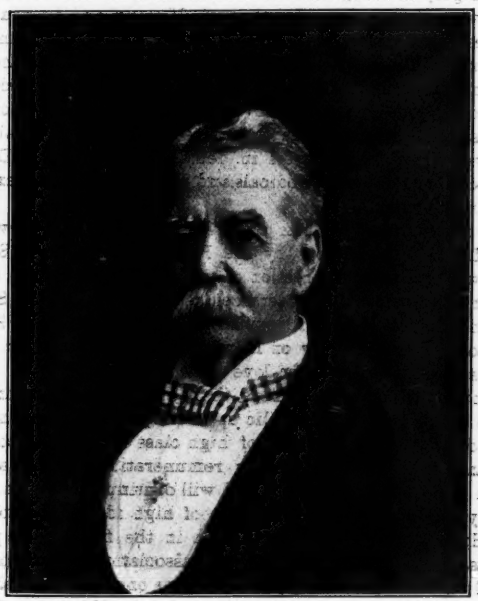
His long and active life was closely identified with every movement in the advancement of dentistry, and his death comes as a severe loss to the profession at large, as well as to his many personal friends—who join us in extending to his bereaved family our deepest sympathy in their affliction.

THE PUBLISHERS, *Dental Office and Laboratory.*

H. J. McKELLOPS.

In the death of Dr. H. J. McKellops, on April 23, 1901, St. Louis has lost the last of her pioneers in the profession of dentistry. Dr. McKellops began the practice of the profession when scarcely half a dozen dentists had offices in St. Louis, his colleagues then being such men as Isaiah Forbes, Aaron Blake, Isaac Comstock, J. L. Clark, C. W. Spalding and H. E. Peebles. All of these had passed away when death closed the career of Dr. McKellops.

He had been for fifty-six years an active practitioner. In that time his reputation had extended over the United States, he had contributed much to the material advancement of the profession of dentistry, and perhaps more than any one else in the city had been instrumental in bringing to it the prestige it enjoys as one of the learned professions.



Dr. McKellops was born at Salina, near Syracuse, N. Y., on August 31, 1823. His father, James McKellops, died before his son had entered his teens. In 1840 he came to St. Louis with his mother and sister, entering one of the public schools. Active and intelligent, he soon after obtained appointment as a messenger in the Missouri Legislature, using the money thus earned for tuition at the University of Missouri at Columbia, where he studied from 1842 to 1844. A course of book-keeping in Jones Commercial College followed this schooling, after which he found employment in the City Registrar's office, where opportunity presented for forming a wide circle of acquaintances, valuable afterwards when he entered the practice of dentistry. He was drawn to the study of medicine in 1846 and 1847, at the old St. Louis Medical College, of which Dr. Charles A. Pope was dean. For the next six years he attended many of the lectures, but never took the degree of M. D. Through the persuasion of his brother-in-law, Dr. Geo. Silvers, a dentist, he was drawn from medicine to the practice of dentistry,

although he afterwards enjoyed the distinction of having delivered the first white child born in Montana. Natural ingenuity and a love of the mechanical arts quickly made him an expert operator, and soon after opening his first office he commanded a practice of the highest class.

In 1855 the degree of D.D.S. was conferred upon him by the Ohio College of Dental Surgery in recognition of his skill and services to the profession, his fame having already extended through Missouri and eventually through all the States of the Union. A sojourn in London and Paris from 1863 to 1865 made him known abroad as well. In Paris and London in 1864 he introduced the use of the mallet in dentistry. Dr. McKellops also introduced in St. Louis the use of continuous gum work, invented by Dr. John Allen of New York. In his profession he was studious, inventive in practice, and always to the front in every step of progress in dental surgery. The Doctor was a subscriber to all the dental periodicals and possessed the most extensive dental library in the world.

A loving cup was left by him on which appears the following: "Presented to Dr. H. J. McKellops by the First District Dental Society of the State of New York, as an expression of the high esteem and as a token of its appreciation of the inestimable services rendered by him as Supervisor of Clinics at the Annual Meeting, New York City, January 21, 1891."

The St. Louis Dental Society on March 24, 1900, tendered Dr. McKellops a banquet as a token of esteem and love.

He is admitted to have done more than any other dentist in St. Louis to educate the better class of the public up to an appreciation of the importance of the care of the teeth, the value of high class dentistry in contrast to low class, and an acquiescence to a proper remuneration for such services. His influence in these directions still is and will continue to be felt.

Personally Dr. McKellops was a man of high ideals, sociable and warm hearted. His sociability found expression in the field of his profession, in the organization of dental societies and associations, in the proceedings of which he always took a leading part. He was one of the organizers of the St. Louis Dental Society, founded on December 9, 1856, and in 1879 served as its president. He helped organize also the Western Dental Association in 1860, was first president of the Missouri State Dental Association in 1865, served as president of the American Dental Association in 1878, and in 1884 was elected president of the Southern Dental Association. He was also a constant attendant of the Mississippi Valley Association of Dental Surgeons.

In social life, no less than in his profession, Dr. McKellops was popular, and he was a particularly welcome guest at social gatherings, because of his high intelligence and brilliant powers of entertainment.

Dr. McKellops also had a military side to his career. He was Captain of the St. Louis Cadets, commissioned by General Edwards in 1842, and in 1845 became a Captain in the St. Louis Legion. In 1846 he commanded the Morgan Riflemen in the Legion's six months' service in the Mexican war, making the noted six months expedition under Col. Alton R. Easton, which included New Orleans, Brazos, Santiago, and up the Rio Grande to Matamoras. At the organization of the St. Louis National Guards

in the fifties he was enrolled as a member and served in the riots of those days. Afterwards as Assistant Adjutant General of the First Brigade in 1858, he marched across the State with the expedition under General D. M. Frost, to put down the invasion of the "Bushwhackers" and "Jayhawkers" who then were ravaging the western counties of Missouri.

The observations of the necessity of dentists in the army no doubt prompted Dr. McKellops to introduce a resolution at a meeting of the Western Dental Society held at Quincy, Ill., July 21, 1858, to the effect that a committee be appointed to memorialize Congress on the necessity of appointing dentists to be attached to the regular army. The resolution was adopted and a similar resolution was passed by the American Dental Convention in August the same year, being introduced by Dr. McKellops.

Dr. McKellops married Miss Annie Gower, of Tennessee, on April 4, 1849. Eight children were born, five sons and three daughters. Those now living are Dr. Henry L. McKellops and Mrs. Josephine Bouvier of San Francisco, Linton J. McKellops and Dr. Leo G. McKellops of St. Louis, Gerald G. McKellops of Cincinnati. His sister, nearly ten years his senior, still survives and resides in New York.

JOHN G. HARPER,
BURTON L THORPE,
EDWARD H. ANGLE. } Committee.

RESOLUTIONS BY SOCIETY OF DENTAL SCIENCE OF ST. LOUIS ON DR. McKELLOPS' DEATH.

At a special meeting of this society, held April 29, 1901, the following resolutions in memory of Dr. H. J. McKellops were unanimously adopted:

Whereas, in the death of Dr. H. J. McKellops the dental profession has sustained a great loss which will be felt throughout the length and breadth of two continents, and

Whereas, the members of the profession in St. Louis and especially of this society, who best knew the depth of his friendship and felt the inspiration of his example, will mourn his loss most deeply, therefore be it

Resolved, That the Society of Dental Science of St. Louis hereby expresses its full appreciation of the valuable services rendered our profession by Dr. McKellops during his long and active life, and

Resolved, That in recognition of his distinguished services and the great honor in which he held his profession, a suitable biographical memorial be prepared and framed, with his photograph, and hung in the rooms of this society, and

Resolved, That a copy of these resolutions be sent to the family and to the dental journals and be spread upon the minutes of this society.

EMMA EAMES CHASE,
HERMANN PRINZ,
B. L. LISCHER,
A. H. FULLER. } Committee.

CINCINNATI ODONTOLOGICAL SOCIETY'S MEMORIAL TO DR. McKELLOPS.

It is with emotions of profound grief that this society learns of Dr. McKellops' death. To numbers of our members the news brings a deep sense of personal loss. Through association with the local profession as a regular attendant on the meetings of the old Mississippi Valley Dental Association Dr. McKellops made many friends in this city. In many respects he was a remarkable man. Of his reputation as a dentist nothing requires to be said. In the dental convention he exercised over all a peculiar fascination, due to a strong personal magnetism. One became quickly impressed with a sense of his straightforward honesty of sentiment, which appeared in his obvious hatred of sham and mere pretense. Dr. McKellops was a man of keen discrimination, and of settled convictions which he never hesitated to announce without fear or favor. In debate he showed unusual aptitude in extracting the substance of an opponent's argument, recapitulating the points sought to be established, and commending or condemning with equal impartiality. His speech was clear, incisive, and in debate often rose to the point of eloquence. Withal Dr. McKellops was a friend to the humblest member of the profession whom he believed to be earnest, sincere and worthy.

Few men of the dental profession have traveled further or explored more thoroughly in remote quarters, in search of improved methods, or to test the merits of new inventions. His judgment in accepting or rejecting thes was singularly reliable, and seldom failed to be sustained by the opinions of others to whom he recommended the results of his researches.

In the death of Dr. McKellops the dental profession has lost a member who by virtue of his personal qualities as well as by the example of loyal adherence to the highest standards of professional attainment, was an inspiration to all who came within the circle of his influence.

FRANK W. SAGE,
C. M. WRIGHT,
J. S. CASSADY. } Committee on Resolutions.

News Summary.

R. H. BLAIR, a dentist at Dallas, Tex., died April 27, 1901.

O. S. ADAMS, 65 years old, a dentist at Elgin, Ill., died April 12, 1901.

C. A. EISENHART, formerly a dentist at York, Pa., died April 23, 1901.

F. F. LITTLE, a dentist at Warren, O., committed suicide May 6, 1901.

S. A. WHITE, 60 years old, a dentist at Savannah, Ga., died April 29, 1901.

H S. THOMPSON, 45 years old, a dentist at Kansas City, died April 27, 1901.

G. W. BROWN, 83 years old, a retired dentist of Jersey City died recently.

C. J. I. MURRAY, 61 years old, a retired dentist at Morris, Ill., died April 19, 1901.

DR. J. F. HASSELL, 73 years old, a dentist at Lexington, Mo., died April 27, 1901.

JOSEPH NORRIS, 83 years old, a retired dentist at Charlottsville, Va., died suddenly April 27, 1901.

NEW YORK DENTAL SCHOOL commencement was held May 6, 1901, and ten students were graduated.

D. E. MOLLEN, a dentist at Cleveland, was adjudged insane May 2, 1901 He has been ill for some time.

MISSOURI DENTAL COLLEGE held its annual commencement exercises April 25, 1901, and graduated 47 students.

INDISPENSABLE.—"We enjoy the DIGEST very much, and couldn't get along without it." Drs. Donaldson, Denver.

ILLINOIS SCHOOL OF DENTISTRY held its annual commencement exercises May 4, 1901, and graduated 29 students.

PITTSBURG DENTAL COLLEGE held its annual commencement exercises April 30, 1901, and graduated 51 students.

PHILADELPHIA DENTAL COLLEGE held its thirty-eighth annual commencement May 3, 1901. The graduates numbered 121.

OHIO COLLEGE OF DENTAL SURGERY held its fifty-fifth annual commencement exercises May 9, 1901, and graduated 69 students.

THE BIG FOUR is the most direct and desirable route to Indianapolis, and offers a rate of a fare-and-a-third for the Tri-State Meeting.

CINCINNATI COLLEGE OF DENTAL SURGERY held its eighth annual commencement exercises May 2, 1901, and graduated 31 students.

LOUISVILLE COLLEGE OF DENTISTRY held its annual commencement exercises May 8, 1901. Graduates, 59; matriculates for session, 212.

DENTIST KILLS GAMBLER.—S. Wintner, a dentist at Granite Falls, Minn., shot and killed a man in a dispute over a game of cards last month.

OHIO MEDICAL UNIVERSITY DENTAL DEPARTMENT held its ninth annual commencement exercises April 16, 1901, and graduated 57 students.

ARSON AFTER ROBBERY.—Burglars robbed a dentist's office at Evansville, Ind., last month and then set fire to the building to conceal the crime.

UNIVERSITY OF MARYLAND DENTAL DEPARTMENT held its annual commencement exercises April 30, 1901. Graduates, 71; matriculates, 206.

"EQUINE DENTAL MACHINE COMPANY."—A company with this name has been organized at Kittery, Me. Another case for the Humane Society.

KIDNAPPERS THREATEN DENTIST.—A wealthy dentist at Altoona, Pa., recently received a letter ordering him to pay $5,000 or have his children taken.

MARION-SIMS DENTAL COLLEGE held a very successful clinic March 7-9, 1901. Much outside talent was present, as well as many practitioners of St. Louis.

CHICAGO COLLEGE OF DENTAL SURGERY held its nineteenth annual commencement exercises April 30, 1901. Graduates, 188; matriculates for session, 638.

BALTIMORE COLLEGE OF DENTAL SURGERY held its sixty-first annual commencement exercises April 30, 1901. Graduates, 79; matriculates for session, 236.

DETROIT DENTAL SOCIETY elected the following officers April 30, 1901: Pres., M. E. Stafford; V. P., J. S. Hall; Sec., L. N. Hogarth; Treas., W. G. Wood.

OMAHA DENTAL COLLEGE ALUMNI organized May 1, 1901, and elected the following officers: Pres., C. S. McLearn; V. P., J. J. Peterson; Sec'y and Treas., Z. D. Clark.

SOUTHERN MINNESOTA DENTAL SOCIETY elected the following officers April 9, 1901: Pres., F. J. Wagner; V. P., A. C. Searl; Sec'y, A. C. Rosenquist; Treas., M. B. Wood.

KEELEY CURE IN LONDON.—It is reported that M. H. Aspinwall, formerly a dentist in Chicago, is identified with a movement to spread the Keeley cure for drunkenness throughout Great Britain.

DAMAGE SUIT FOR INJURED GUMS.—A woman in Jersey City has brought suit for $5,000 damages against a dentist who, she claims, used arsenic while fixing up her teeth, which destroyed the gum and alveolar process.

FOURTH DISTRICT DENTAL SOCIETY held its thirty-third annual meeting at Schenectady, April 16, 1901, and elected the following officers: Pres., A. D. Youngs; V. P., G. Brown; Sec., E. B. Rhinehart; Treas., E. Doolittle.

OHIO COLLEGE OF DENTAL SURGERY ALUMNI ASSOCIATION erected a marble tablet to the memory of George W. Keeley, D.D.S., trustee and first teacher of Orthodontia in that college, and it was unveiled May 9, 1901.

SIXTH DISTRICT DENTAL SOCIETY held its thirty-third annual meeting at Binghamton, N. Y., May 2, 1901, and elected the following officers: Pres., M. O. Landon; V. P., F. M. Willis; Sec., F. W. McCall; Treas., H. B. Whitmarsh.

EXTRACTION CAUSES DEATH.—A young man in Pennsylvania died last month from cerebral hemorrhage superinduced, it is said, by the extraction of two teeth, which broke an artery in the brain and caused him to slowly bleed to death.

THIRD DISTRICT DENTAL SOCIETY held its annual meeting at Albany, April 16, 1901, and elected the following officers: Pres., G. A. Sullivan; V. P., F. Ketner; Sec., M. J Barrett; Treas., J. W. Canaday; Correspondent, F. L-G. Ames.

SEVENTH DISTRICT DENTAL SOCIETY held its thirty-third annual meeting at Rochester, April 10, 1901, and elected the following officers: Pres., W. W. Belcher; V. P., F. W. Proseus; Rec. Sec., F. Messerschmitt; Cor. Sec., F. W. Bunbury; Treas, Leroy Requa.

OAKLAND HYDROGEN DIOXID will hereafter be known as "Dioxogen" for the protection of the dental profession. The change of name has become imperative both to protect the dentist from inferior solutions and to preserve the reputation of the product itself.

ILLEGAL PRACTICE EXPENSIVE.—Practicing dentistry without a license last month cost two men in Worcester, Mass., $50 each, and one in Brooklyn $50; while individuals in Connecticut, Scranton, Pa., and Louisville have been arrested and will be tried for the same offense.

VULCANIZERS QUIET.—Either dentists have stopped using vulcanizers, or all the weak and defective instruments have been accounted for, as we have heard of only one of the infernal machines blowing up within the last three months. It wrecked an office at Los Angeles and scattered "store teeth" all over the street.

DENTAL INSTRUCTION IN THE PUBLIC SCHOOLS is not being favorably commented on by the lay press of the country. This is not to be wondered at, as the average newspaper editor, judging from the articles which appear in the various papers, knows less about the teeth and dentistry than he does about the lost tribe of Israel.

"ORAL PATHOLOGY AND PRACTICE."—By Dr. W. C. Barrett, Buffalo, N. Y. This standard text-book by a well-known writer has reached its second edition. The author has almost entirely rewritten the book, making the new volume nearly one-third larger than the old. Pages 319. Illustrations, 100. Price, $3.00 net. S. S. White Co., Philadelphia.

BURLESQUE ADVERTISING.—The dental parlors at Altoona, Pa., became so extravagant recently in their promises and advertisements that several of the reputable dentists of the city issued an unsigned and clever burlesque advertisement, which it is said had a wholesome effect in enlightening the community as to the methods and promises of fakirs.

ADMINISTRATION OF ANESTHETICS.—William Calwell draws attention to the importance of obtaining a history of recent influenza before the administration of anesthetics, especially of chloroform; there have been large numbers of deaths from chloroform administration, and this is especially the case during influenza epidemics. Very suspicious cases have occurred, which were clearly explained by the depressed condition of the nervous system and of the heart.

ALOPECIA AND DENTAL LESIONS.—M. Jacquet found in forty persons suffering from alopecia, six with mediocre teeth, thirty-one with defective teeth, three only with perfect teeth. He believes that a close relation exists between alopecia and bad teeth or dental lesions, as both indicate an absence of some of the essential mineral salts in the body, especially the sulphates of sodium and potassium, the chlorid of sodium, and the phosphate of calcium.—*Presse Medicale.*

VALLEY DISTRICT DENTAL SOCIETY held its annual meeting at Springfield, Mass., April 15, 1901, and elected the following officers: Sec'y, A. J. Flanagan; Treas., C. S. Hurlbut; Ex. Com., H. C. Medcraft, D. H. Allis, E. T. Dickinson. It was officially reported that suit had been instituted against Dr. G. A. Maxfield of Holyoke for malicious arrest, the result of his acting on the state board. The Massachusetts and Valley District Societies will assume all responsibility of the suit.

FOREIGN BODY IN THE MAXILLARY SINUS DISCOVERED BY RADIOSCOPIC EXAMINATION.—Dr. Mignon of Nice reported in the *Internat. Archiv. de Laryngol* an interesting case in which the patient, a young man twenty-one years of age, with suicidal intent discharged a revolver against his temple. A few days after the incident, as no symptoms of reaction occurred, an examination by the radioscope was attempted, and it was found that the bullet was lying loose within the left maxillary sinus.

ASTRONOMICAL.—He had been there. Said the siren to the young student, as she Saturn her scarlet couch: "Won't you come in and spend an hour with Venus?" "No, thanks," said the young student, "not any. I've been there. I spent an hour with Venus already last year, and then went up to the hospital and spent six months with Mercury, and since then I have been laid up at Mar's; and don't Juno, I consider it a Sirius matter." Saying which the young student Side-real big sigh and moved on.—*Texas Med. Jour.*

STERILIZATION OF COCAIN. Reclus (*Bulletin de l'Acad. de Med.*)—One gram of cocain hydrochlorate in 100 grams of distilled water is distributed in small vials which are plugged with cotton and placed in a water bath. The temperature is gradually raised to 100 C. and the boiling continued for half an hour. This method has proved more satisfactory than that of Tyndall's in three years' experience. The cocain remains intact and retains all its properties, the light rotating power is not altered nor is the anesthetic action modified.—*Jour. A. M. A.*

REGULAR BREATHING IN BEGINNING NARCOSIS.—C. Hoffmann emphasizes the importance of securing regular respiration while the first stages of anesthesia are progressing. Quiet and kindly encouragement of the patient are of great value, and the direction to count out loud often accomplishes the purpose, but a still more efficacious method is to have the patient begin with some number having three figures or more and then count backward. The amount of mental concentration required to do this, as well as the act of pronunciation, insures deep regular respiration in almost every case.—*Centralb. L. Chirur.*

NERVOUS.—I used to know a nervous man, who feared that he'd be robbed. Immense precautions did he use, yet with that terror throbbed. He thought thieves might take anything—his folks, his goods, his life—so when he went away from home he always wired his wife. He pursed his lips to keep them safe, he used to hide his son; he always kept his books well bound; he liked tied games alone. Of course he'd lashes on his eyes, and, as it sometimes rains, he took in all the shows each night. His arguments had chains. He wouldn't buy a chainless wheel, although the neighbors laughed; and when he died he left a wish they'd sink his marble shaft.—*Yale Record.*

"DENTAL ELECTRICITY."—By Levitt E. Custer, B.S., D.D.S., Dayton, O. The many applications of electricity that are being made in dentistry make it necessary that the dentist shall know something of it without going over so much that is foreign to the subject With this object in view the author arranged the fundamental subjects in the most simple and tangible form, while the special dental applications have all been worked out in detail.

Many appliances, such as electric engines, motors, mallets, pluggers, furnaces, mouth-lamps, annealers, etc., together with recent improvements in X-ray work, are described at length. Much valuable advice and many practical hints are given, such as pointing out the danger from faulty insulation, and showing how it may be avoided. The profession will find this book a great help, and we can heartily recommend it to all who do anything in electricity. The work contains over 500 pages and nearly 200 figures and diagrams. Price, $4.00. L. E. Custer, Dayton, O.

PHARYNGEAL ADENOIDS AND HYPERTROPHIED TONSILS. By Dr. J. H. Woodward.—The author points out as the symptoms common to all cases of adenoids, (*a*) hyperplasia of the lymphoid tissue in the vault of the pharynx; (*b*) chronic congestion of the submucous blood-vessels of the inferior turbinated body; (*c*) a more or less profuse mucopurulent discharge. The author calls attention to the facts that a certain development of lymphoid tissue in the nasopharynx is normal, and necessary to the patient's well-being, and that the so-called Luschka's tonsil is not a pathological structure, and that it becomes such only when it has undergone hypertrophy or hyperplasia. Its function is to secrete mucus for the lubrication of the nasopharynx.—*Med. News.*

EUCALYPTO-PERCHA.—Dr. W. F. Green first dissolved gutta-percha in chloroform, allowing it to stand a sufficient length of time to become thoroughly dissolved; and then adds eucalyptus to the chloro-percha, allowing the chloroform to evaporate through antiseptic gauze and gradually adding more eucalyptus until the mass is of a proper consistency. While this method is not new, he claims that by so doing he gets the gutta-percha into a more finely comminuted form than could possibly be done by the simple use of eucalyptus. By the aid of the microscope the mass to all appearances is much more homogeneous than is chloro-percha. It is used in filling root-canals in the usual manner, being pumped in thoroughly and followed by a gutta percha point.—*Review.*

DISEASED TOOTH CAUSES NEUROSIS OF CERVICAL AND BRACHIAL PLEXUS, —Hesse reports the case of a girl who, in 1895, bit upon a shot, causing severe pain in the tooth. Subsequently there were pains in the upper and lower jaws, that soon extended to the right shoulder, breast and arm. The duration of the attacks varied from ½ hour to 4 hours. The exciting causes were emotional disturbances, warm or cold fluids in the mouth, or sudden jarring of the body. Two months after the injury to the tooth paralysis developed in the right arm. The tooth was still painful, and as a reference to the clinical reports showed that the pulp had been exposed during filling six years before, it was decided to extract it. The pulp was found gangrenous, and there was some periostitis about the roots. For the first three weeks the pain was still present, but much milder, and after that it disappeared completely.—*Neurolog. Centralb. Phil. Med. Jour.*

ABSENCE OF SALIVA.—Dr. L. Quinton (*Revista Medico Dental* of Mexico) reports a case of asialism. The patient came complaining of not being able to swallow his food for want of saliva. His voice was husky and mouth

exhaled a nauseous odor. His teeth were covered by a thick coating of sordes. The patient's general health, however, seemed reasonably good except for a certain weakness, probably the result of the disinclination for food that had existed for some time. Inquiry showed that his urine was very much reduced in quantity. The patient presented some chronic eye trouble. For this it was ascertained he had been directed to use a solution of atropin. The case proved to be one of chronic atropinism. As soon as the atropin was stopped his condition began to improve, and at the end of the second week recovery was complete. The case seems a good illustration of the danger of allowing patients to have prescriptions renewed at will.

A MAN named Higgins perpetrated a practical joke on Carrie Nation while the smasher was in Indianapolis recently. A well-known local dentist, who dresses well and is rather adipose, was standing at the corner when Mrs. Nation got through haranguing the crowd.

"Look at that man," said Higgins, pointing to his friend, the doctor. "He is well off, and he makes his money out of the tears of orphans, the wails of widows and the groans of strong men."

"He keeps a rum-shop, does he?" said the smasher, darting a piercing glance in his direction.

"No," said Higgins, "he is a dentist."

ACTINOMYCOSIS.—Littledale reports the case of a man, aged 23 years, who presented a swelling of four months' duration, that began between the angle of the jaw and the mastoid process of the temporal bone. The swelling extended around the back of neck to the right side and front of the neck and thence down to the sternum. A diagnosis of actinomycosis was made, but the typical ray fungus was not found in the pus nor in the scrapings from the wall of the abscess-cavity during life. A second abscess developed in front of the sternum and a third at the vertebral border of the right scapula. Later numerous abscesses formed about the back and neck. The patient died after eight months' illness with advanced amyloid disease and symptoms of pulmonary tuberculosis. Actinomyces were demonstrated in the tissues obtained at the autopsy. The affected lung showed double infection with tuberculosis and actinomycosis.—*Brit. Med. Jour.*

ADENOIDS.—Huber describes the symptoms and consequences of adenoid growths and calls attention to certain points in the diagnosis. He mentions two which jointly offer a ready and easy method. These consist in: 1. The presence of two small hypertrophied lymph nodes, painless and freely movable, at the angle of the lower jaw, one on either side. These are apt to become swollen in catarrhal inflammation of the nose, but return to their normal size unless a mixed infection has taken place. 2. The presence, on oral inspection and examination, of numerous small lymphoid hypertrophies of the mucous membrane of the posterior pharynx with larger masses occasionally present at the level of the soft palate. The appearance is characteristic; the isolated prominences are pearly and translucent, resembling sago grains, projecting above the surface of the pharyngeal mucous membrane; the presence of both signs together justifies the diagnosis of ade-

noids and renders digital exploration of the nasal pharynx unnecessary.—*Jour. A. M. A.*

X-RAYS WITHOUT ELECTRICITY.—A cable to the New York *Sun*, April 2d, reports that it was announced on April 1st at a sitting of the Academy of Sciences that M. Currie, a chemist, has separated a new gas from rhodium. The gas is intensely phosphorescent, and will glow for months in the dark. It was also announced that M. Naudon, a scientist, had found means of producing X-rays without electricity, by exposing a metal plate to the rays of the violet end of the spectrum.—*Med. Record.*

"STOMATITE ERUCIQUE."—At a recent meeting of the Parisian Society of Biology, M. Artault gave an account of a curious form of stomatitis which he proposes to call "stomatite erucique," the origin of which had been hitherto unknown. It is, however, now known to be caused by eating fruits which have been in contact with the nests of certain caterpillars possessing an urticating property. The inflammation attacks the mucous membrane of the mouth, the lips, the gums, the cheeks, and the palate. The cause is the irritating hairs and secretions which the caterpillars leave in their nests. The disease, as a rule, attacks children who eat fruits which are taken into the mouth whole, such as cherries and gooseberries, and it is hardly ever seen except during the months of May and June, especially in dry years. A mouth-wash composed of tincture of "myrrh" generally cures the complaint very easily.—*Medical Age.*

DISORDERS OF DENTITION.—There are two extremes in theory: 1st, that dentition is responsible for all the ailments which a teething child suffers, and 2d, that a child, although having all its deciduous teeth, is ill merely from teething. The middle ground is the sound one. All the coexisting morbid conditions associated with dentition can not be accidental. Inflammatory conditions of the buccal mucous membrane may at times be local, but are often general, and may cause either catarrhal or aphthous stomatitis. Extension of the inflammatory process, and the reflex irritation thus caused, have been held as the cause of acute anterior poliomyelitis and possibly spinal meningitis. The excessive dribbling of saliva often wets through the child's garments and gives rise to coryza and bronchitis, which might also very readily arise from extension of the inflammation of mucous membrane to the upper and lower air passages. Swallowing quantities of saliva causes a form of diarrhea and gastric disorders prevalent during dentition. The local inflammation is also sufficient to cause the usual rise in temperature. Urticaria, occasional lichen and prurigo, eczema and impetigo, crusta lactea of the hairy scalp, as well as other skin eruptions, occur with the cutting of certain teeth, and subside when it is completed. An infant's nervous system is easily disturbed by reflex influences, and a partial contraction of the muscles of the throat and neck during dentition, due to nerve irritation, has been observed. Dentition is often the cause of an otitis media, and conjunctival blennorrhea is frequently associated with the cutting of the cuspids. In view of all this, the question of proper diagnosis during dentition is vital.—*Phila. Med Jour.*

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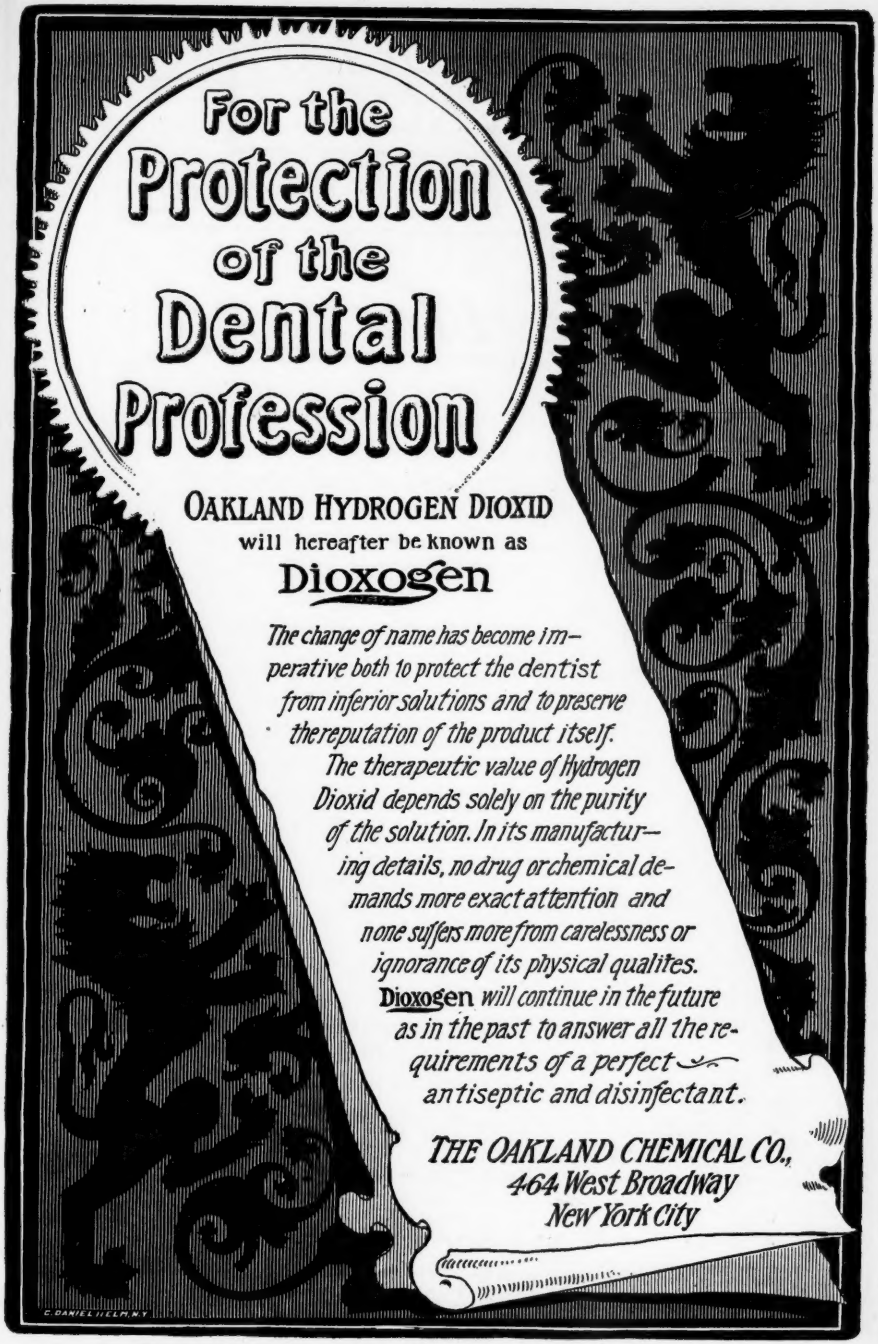
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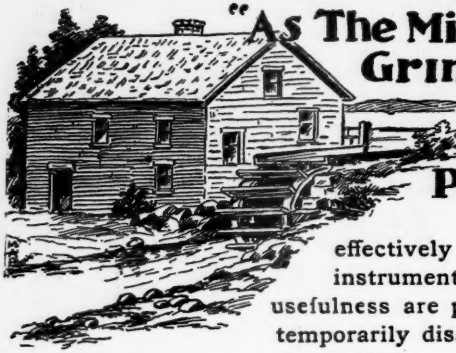

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